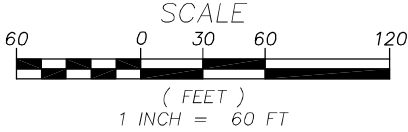


PLAN LEGEND

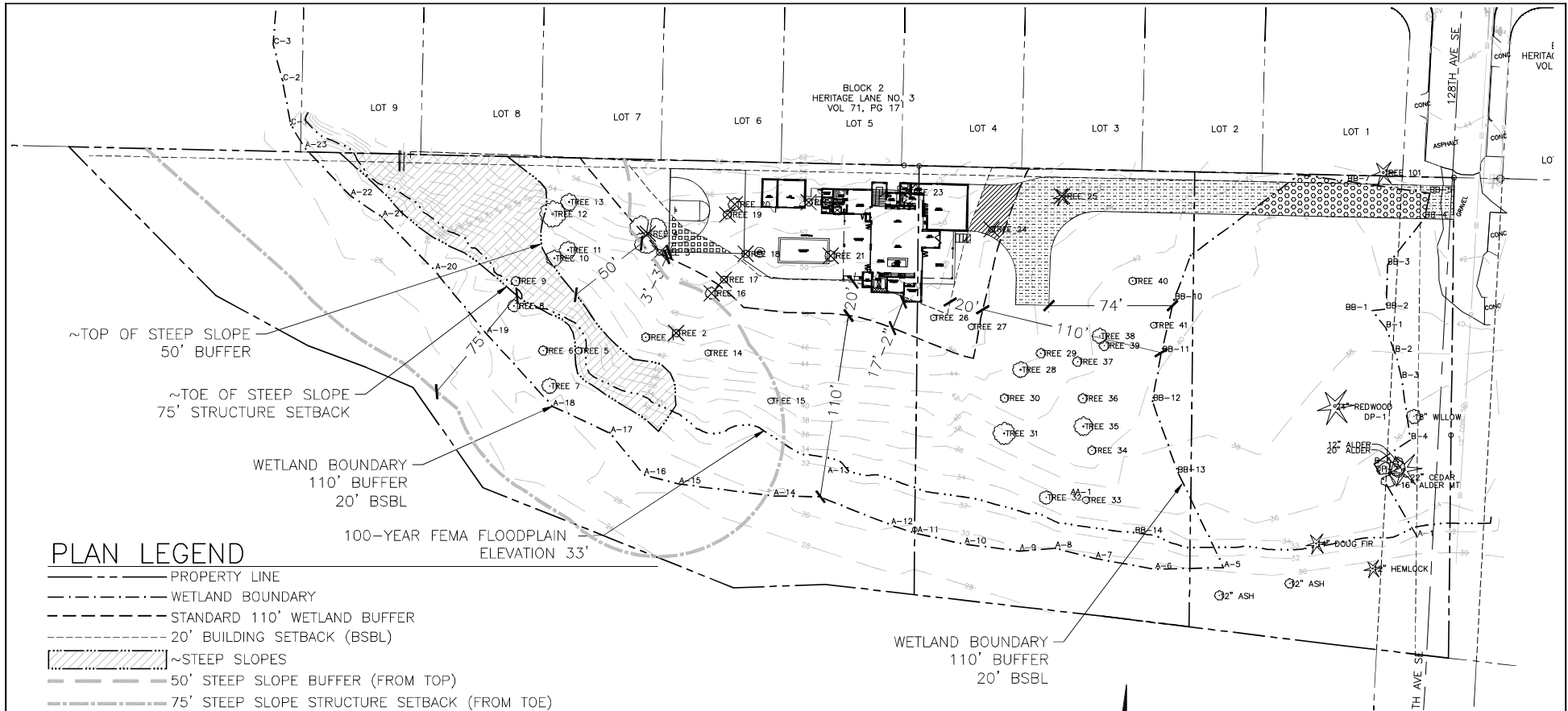
- PROPERTY LINE
- WETLAND BOUNDARY
- STANDARD 110' WETLAND BUFFER
- 20' BUILDING SETBACK (BSBL)
- [Pattern] NATIVE VEGETATION - 93,204 SF
- [Pattern] REED CANARYGRASS - 13,326 SF
- [Pattern] SCATTERED TREES WITH BLACKBERRIES AND FERNS IN THE GROUNDCOVER LAYER - 36,272 SF
- [Pattern] DENSE BLACKBERRIES - 30,387 SF
- [Pattern] GRAVEL - 558 SF



NOTES

- SURVEY PROVIDED BY PLOG ENGINEERING, P.O. BOX 412, RAVENDALE, WA 98051, (206) 420-7130. SITE PLAN PROVIDED BY MEDICI ARCHITECTS, 11711 SE 8TH STREET, SUITE 100, BELLEVUE, WA 98005, (425) 453-9298.

AQUATICA ENVIRONMENTAL CONSULTING, LLC P.O. BOX 308 DUVALL, WA 98019	T 425.802.8988	EXISTING VEGETATION OLTEANU PROPERTY 807 128TH AVE. SE BELLEVUE, WASHINGTON PARCELS 0424059110, -9111, -9112		DRAWN BY KG	CHECKED BY TO
				SCALE AS NOTED	DATE 10.20.21
				PROJECT NO. 21-368	
				FIGURE 4	OF 9



PLAN LEGEND

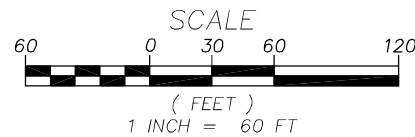
- PROPERTY LINE
- WETLAND BOUNDARY
- STANDARD 110' WETLAND BUFFER
- 20' BUILDING SETBACK (BSBL)
- ~STEEP SLOPES
- 50' STEEP SLOPE BUFFER (FROM TOP)
- 75' STEEP SLOPE STRUCTURE SETBACK (FROM TOE)
- 100-YEAR FEMA FLOODPLAIN

× TREES TO BE REMOVED - REMOVED TREES IN BUFFER AREAS SHALL BE CONVERTED TO SNAGS AT A HEIGHT LESS THAN THE DISTANCE TO NEW INFRASTRUCTURE. LOGS FROM THE OTHER REMOVED TREES SHALL BE RETAINED ON-SITE AS NEEDED TO PROVIDE LARGE WOODY DEBRIS FOR WETLAND AND BUFFER ENHANCEMENT.

IMPACT LEGEND

- WETLAND IMPACT (DRIVEWAY) - 1,943 SF (0.04 ACRES)
- WETLAND BUFFER IMPACT (DRIVEWAY) - 4,888 SF (0.11 ACRES)
- STRUCTURE SETBACK IMPACT (HOUSE) - 48 SF
- STRUCTURE SETBACK IMPACT (DRIVEWAY/PAVING) - 655 SF
- STRUCTURE SETBACK IMPACT (SPORT COURT) - 389 SF
- TOTAL STRUCTURE SETBACK IMPACT - 1,092 SF

WETLAND BOUNDARY
110' BUFFER
20' BSBL



NOTES

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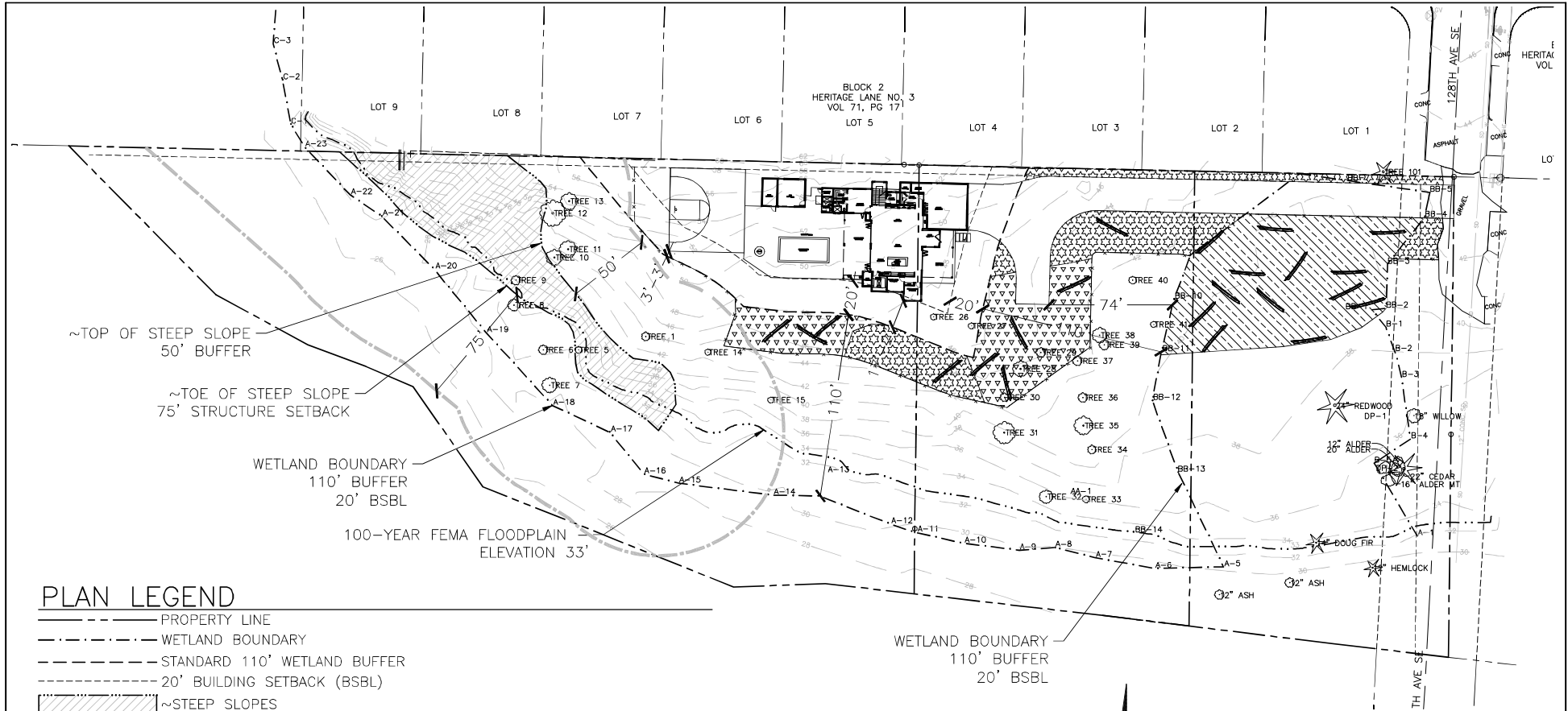
T 425.802.8988

SITE PLAN AND IMPACTS
OLTEANU PROPERTY
807 128TH AVE. SE
BELLEVUE, WASHINGTON

PARCELS 0424059110, -9111, -9112

DRAWN BY KG	CHECKED BY TO
SCALE AS NOTED	DATE 10.20.21
PROJECT NO. 21-368	
FIGURE 5	OF 9

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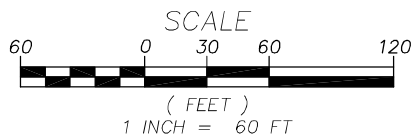
PLAN LEGEND

- PROPERTY LINE
- - - - - WETLAND BOUNDARY
- - - - - STANDARD 110' WETLAND BUFFER
- - - - - 20' BUILDING SETBACK (BSBL)
- ~ STEEP SLOPES
- - - - - 50' STEEP SLOPE BUFFER (FROM TOP)
- - - - - 75' STEEP SLOPE STRUCTURE SETBACK (FROM TOE)
- - - - - 100-YEAR FEMA FLOODPLAIN
- - - - - CONSTRUCTION FENCING AND EROSION CONTROL
- - - - - LARGE WOODY DEBRIS

MITIGATION LEGEND

- WETLAND ENHANCEMENT - 9,402 SF (0.21 ACRES)
- BUFFER ENHANCEMENT WITH BLACKBERRY REMOVAL AND PLANTING WITH TREES, SHRUBS AND GROUND COVER - 6,361 SF (0.15 ACRES)
- BUFFER ENHANCEMENT WITH BLACKBERRY REMOVAL AND PLANTING WITH SHRUBS IN AREA OF EXISTING NATIVE FERNS AND TREES - 6,067 SF (0.14 ACRES)
- TOTAL MITIGATION - 21,830 SF (0.50 ACRES)

WETLAND BOUNDARY
110' BUFFER
20' BSBL



NOTES

1. SURVEY PROVIDED BY PLOG ENGINEERING, P.O. BOX 412, RAVENDALE, WA 98051, (206) 420-7130. SITE PLAN PROVIDED BY MEDICI ARCHITECTS, 11711 SE 8TH STREET, SUITE 100, BELLEVUE, WA 98005, (425) 453-9298.

AQUATICA

ENVIRONMENTAL CONSULTING, LLC

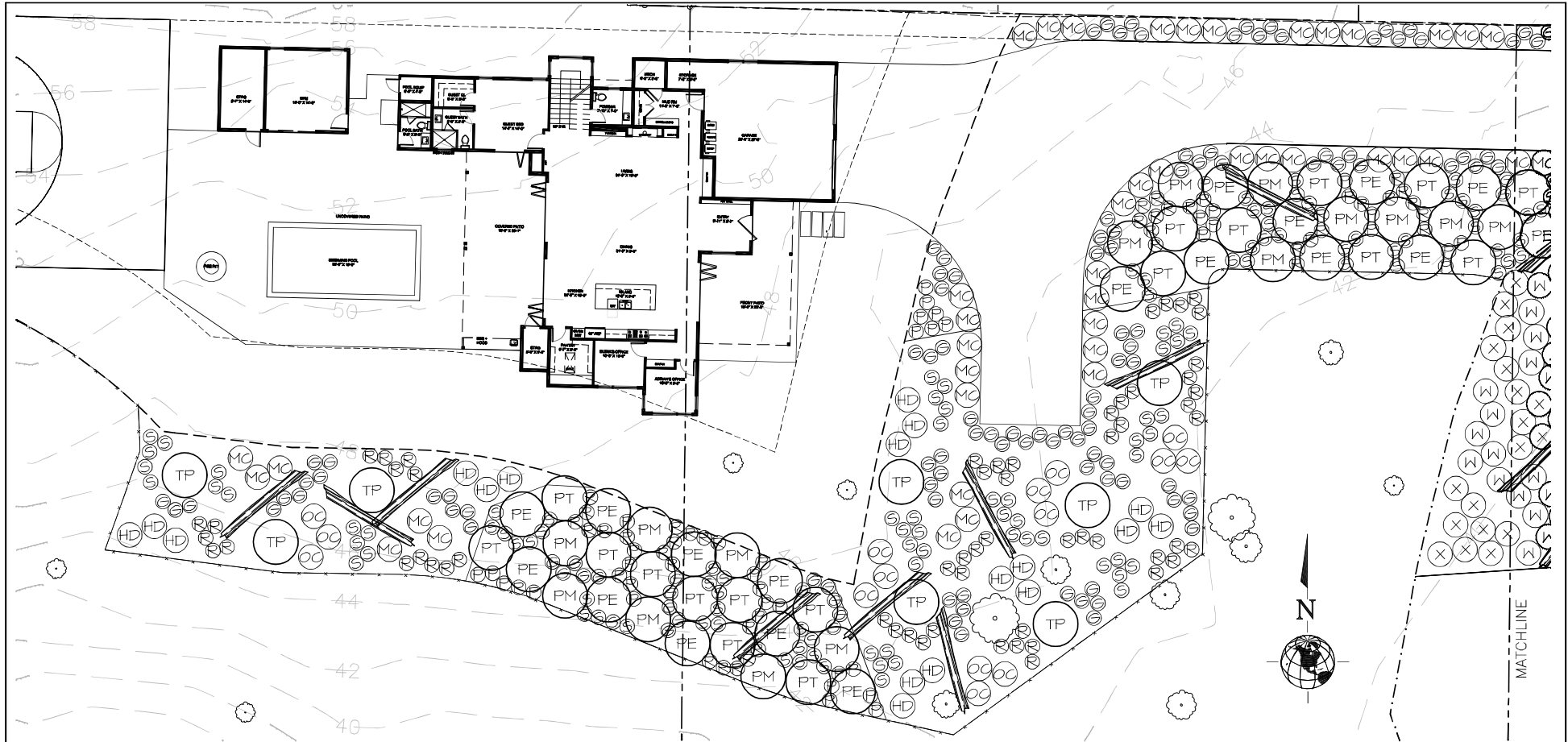
P.O. BOX 308
DUVALL, WA 98019

T 425.802.8988

PROPOSED MITIGATION
OLTEANU PROPERTY
807 128TH AVE. SE
BELLEVUE, WASHINGTON

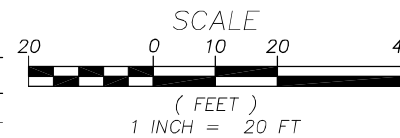
PARCELS 0424059110, -9111, -9112

DRAWN BY KG	CHECKED BY TO
SCALE AS NOTED	DATE 10.20.21
PROJECT NO. 21-368	
FIGURE 6	OF 9



PLANT LIST (SEE FIGURE 6 FOR SCHEDULE)

TREES		SHRUBS		GROUND COVER	
KEY	COMMON NAME	KEY	COMMON NAME	KEY	COMMON NAME
PS	SITKA SPRUCE	HD	OCEAN SPRAY	G	SISAL
PT	QUAKING ASPEN	MC	PACIFIC WAX MYRTLE	P	SWORD FERN
PE	BITTERCHERRY	OC	INDIAN PLUM		
PM	DOUGLAS FIR	R	THIMBLEBERRY		
W	PACIFIC WILLOW	X	SITKA WILLOW		
TP	WESTERN RED CEDAR	S	SNOWBERRY		



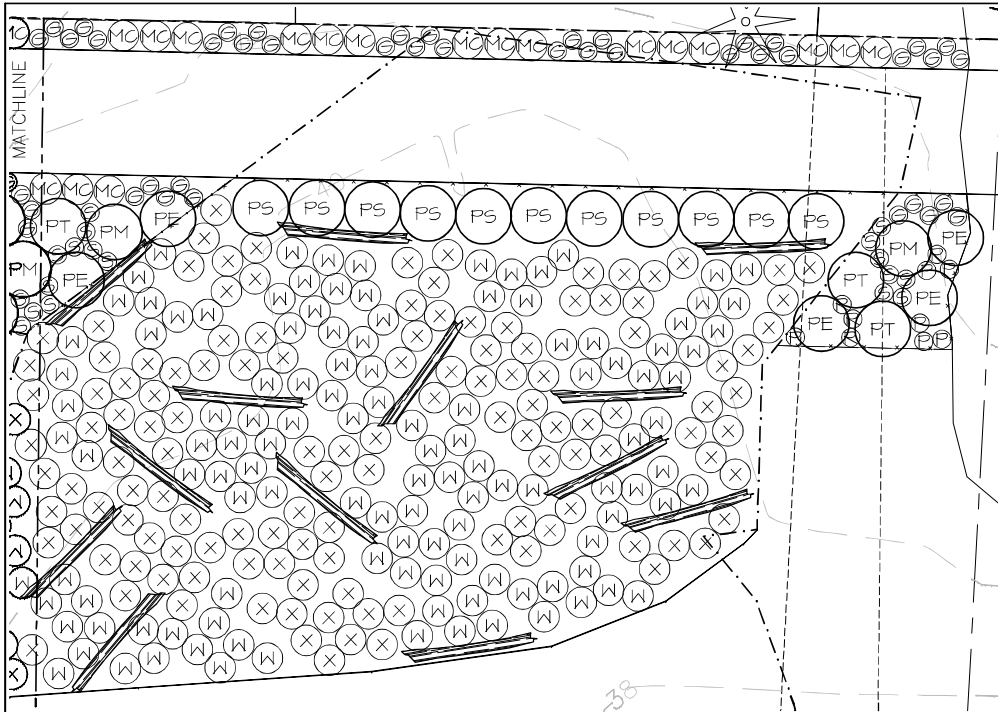
NOTES

- SURVEY PROVIDED BY PLOG ENGINEERING, P.O. BOX 412, RAVENDALE, WA 98051, (206) 420-7130. SITE PLAN PROVIDED BY MEDICI ARCHITECTS, 11711 SE 8TH STREET, SUITE 100, BELLEVUE, WA 98005, (425) 453-9298.

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PLANTING PLAN
OLTEANU PROPERTY
807 128TH AVE. SE
BELLEVUE, WASHINGTON
PARCELS 0424059110, -9111, -9112

DRAWN BY KG	CHECKED BY TO
SCALE AS NOTED	DATE 10.20.21
PROJECT NO.	21-368
FIGURE 7	OF 9



PLANT SCHEDULE

TREES

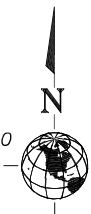
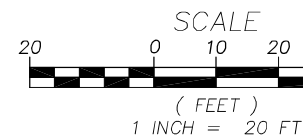
KEY	SCIENTIFIC NAME	COMMON NAME	SIZE (MIN.)	SPACING	QUANTITY
PS	PICEA SITCHENSIS	SITKA SPRUCE	5 GAL.	AS SHOWN	11
PT	POPULUS TREMULOIDES	QUAKING ASPEN	2 GAL.	AS SHOWN	19
PE	PRUNUS EMARGINATA	BITTERCHERRY	2 GAL.	AS SHOWN	22
PM	PSEUDOTSUGA MENZIESII	DOUGLAS FIR	2 GAL.	AS SHOWN	17
W	SALIX LASIANDRA	PACIFIC WILLOW	2 GAL.	5' O.C.	127
TP	THUJA PLICATA	WESTERN RED CEDAR	5 GAL.	AS SHOWN	8

SHRUBS

KEY	SCIENTIFIC NAME	COMMON NAME	SIZE (MIN.)	SPACING	QUANTITY
HD	HOLODISCUS DISCOLOR	OCEAN SPRAY	1 GAL.	5' O.C.	18
MC	MYRICA CALIFORNICA	PACIFIC WAX MYRTLE	1 GAL.	5' O.C.	58
OC	OEMLERIA CERASIFORMIS	INDIAN PLUM	1 GAL.	5' O.C.	15
R	RUBUS PARVIFLORUS	THIMBLEBERRY	1 GAL.	3' O.C.	96
X	SALIX SITCHENSIS	SITKA WILLOW	2 GAL.	5' O.C.	136
S	SYMPHORICARPOS ALBUS	SNOWBERRY	1 GAL.	3' O.C.	122

GROUND COVER

KEY	SCIENTIFIC NAME	COMMON NAME	SIZE (MIN.)	SPACING	QUANTITY
G	GAULTHERIA SHALLON	SALAL	1 GAL.	3' O.C.	159
P	POLYSTICHUM MUNITUM	SWORD FERN	1 GAL.	3' O.C.	54



NOTES

1. SURVEY PROVIDED BY PLOG ENGINEERING, P.O. BOX 412, RAVENDALE, WA 98051, (206) 420-7130. SITE PLAN PROVIDED BY MEDICI ARCHITECTS, 11711 SE 8TH STREET, SUITE 100, BELLEVUE, WA 98005, (425) 453-9298.

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DUVALL, WA 98019

T 425.802.8988

PLANTING PLAN
OLTEANU PROPERTY
807 128TH AVE. SE
BELLEVUE, WASHINGTON
PARCELS 0424059110, -9111, -9112

DRAWN BY KG	CHECKED BY TO
SCALE AS NOTED	DATE 10.20.21
PROJECT NO.	21-368
FIGURE 8	OF 9

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SPECIFICATIONS

CONSTRUCTION/SPECIFICATIONS

- Prior to construction, the limits of work will be clearly staked at 20-foot intervals and all temporary erosion and sedimentation controls in place.
- Hazard trees proposed to be removed in the buffers shall be transformed into snags at a height less than their distance to new infrastructure to prevent future hazards. Removed trees on-site shall be preserved as needed to provide large woody debris as noted in the buffer.
- Sheet mulch all buffer areas to be planted. Do not sheet mulch native ferns. Do not sheet mulch wetland areas. Mulch shall be a minimum of 4" of coarse wood chips such as arborist chips.
- Species substitution shall not be made without approval of wetland biologist.
- Plants shall be locally grown (western Washington or Oregon), of normal health, vigorous, and free of weeds, diseases, insects, insect eggs and larvae.
- Container grown plants shall not be loose in container and shall not be pot-bound.
- B&B plant material shall not have cracked or mushroomed root balls. Root balls shall be firm, natural balls of earth of sufficient size to encompass the fibrous and feeding rooting system necessary for establishment and health of plant.
- Do not prune plants prior to delivery or planting.
- Take all precautions and customary good trade practices in preparing plants for transport. Cover plants transported on open vehicles with a protective covering to prevent wind burn.
- Protect plants from drying out. Bare root and B&B plant material shall have their roots kept moist at all times. Protect from freezing, wind, and sun. If planting is delayed by more than 24 hours, cover roots/root balls with sawdust, compost, or soil. Water plants as necessary.
- Water plants within 24 hours of planting.
- All receipts for labor and materials shall be retained for submittal to the County if requested.
- The bond holder shall replace any plants that die within the first year following approval of installation.

SHRUB AND TREE SOURCES

STORM LAKE GROWERS
MONROE, WA
(360) 794-4842

OXBOW FARMS
CARNATION, WA
(425) 788-1134
EXT. 4

TADPOLE HAVEN NATIVE PLANTS
WOODINVILLE, WA
(425) 788-6100

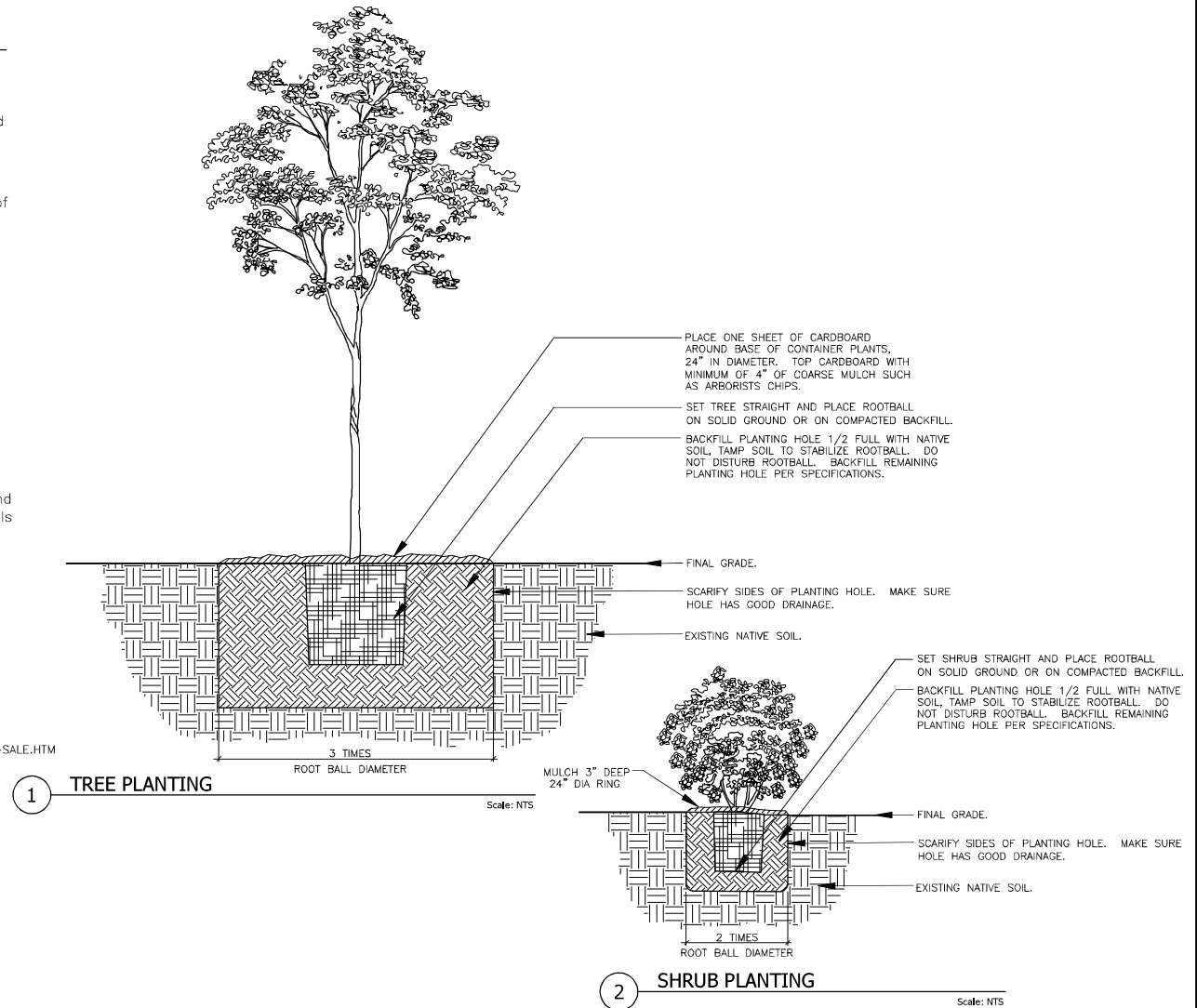
KING COUNTY CONSERVATION DISTRICT
[HTTP://KINGCD.ORG/PROGRAMS-NATIVE-WALK-UP-SALE.HTM](http://kingcd.org/programs-native-walk-up-sale.htm)

SEED SOURCES:

PLANTAS NATIVA
BELLINGHAM, WA
(360) 715-9655

INSIDE PASSAGE SEEDS
PORT TOWNSEND, WA
(360) 385-6114

FROSTY HOLLOW ECOLOGICAL RESTORATION
LANGLEY, WA
(360) 579-2332



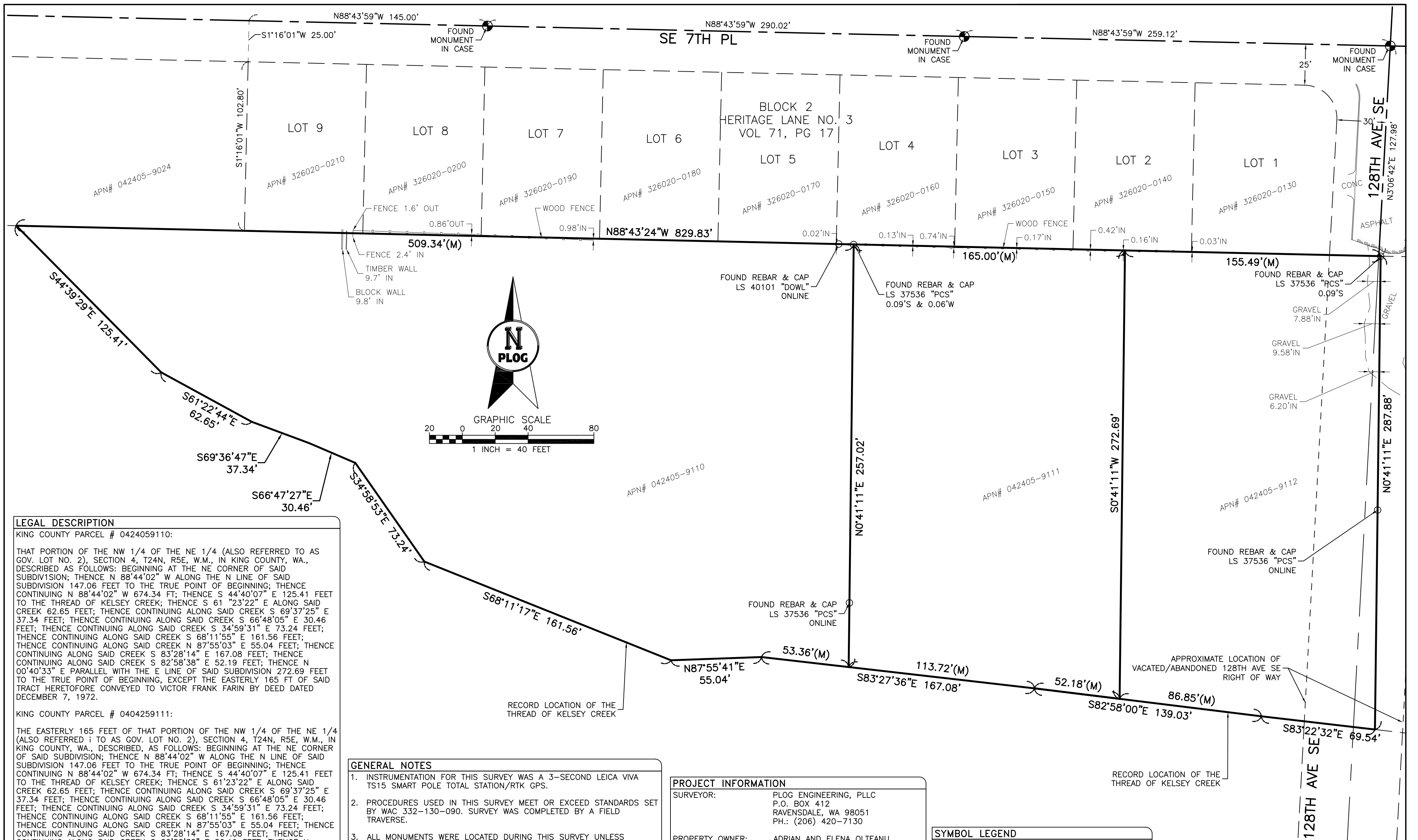
AQUATICA
ENVIRONMENTAL CONSULTING, LLC

P.O. BOX 308
DUVALL, WA 98019

T 425.802.8988

DETAILS AND SPECIFICATIONS
OLTEANU PROPERTY
807 128TH AVE. SE
BELLEVUE, WASHINGTON
PARCELS 0424059110, -9111, -9112

DRAWN BY KG	CHECKED BY TO
SCALE AS NOTED	DATE 10.20.21
PROJECT NO. 21-368	
FIGURE 9	OF 9



LEGAL DESCRIPTION

KING COUNTY PARCEL # 0424059110:

THAT PORTION OF THE NW 1/4 OF THE NE 1/4 (ALSO REFERRED TO AS GOV. LOT NO. 2), SECTION 4, T24N, R5E, W.M., IN KING COUNTY, WA., DESCRIBED AS FOLLOWS: BEGINNING AT THE NE CORNER OF SAID SUBDIVISION; THENCE N 88°44'02" W ALONG THE N LINE OF SAID SUBDIVISION 147.06 FEET TO THE TRUE POINT OF BEGINNING; THENCE CONTINUING N 88°44'02" W 674.34 FT; THENCE S 44°40'07" E 125.41 FEET TO THE THREAD OF KELSEY CREEK; THENCE S 61°23'22" E ALONG SAID CREEK 62.65 FEET; THENCE CONTINUING ALONG SAID CREEK S 69°37'25" E 37.34 FEET; THENCE CONTINUING ALONG SAID CREEK S 66°48'05" E 30.46 FEET; THENCE CONTINUING ALONG SAID CREEK S 34°59'31" E 73.24 FEET; THENCE CONTINUING ALONG SAID CREEK S 68°11'55" E 161.56 FEET; THENCE CONTINUING ALONG SAID CREEK N 87°55'03" E 55.04 FEET; THENCE CONTINUING ALONG SAID CREEK S 83°28'14" E 167.08 FEET; THENCE CONTINUING ALONG SAID CREEK S 82°58'38" E 52.19 FEET; THENCE N 00°40'33" E PARALLEL WITH THE E LINE OF SAID SUBDIVISION 272.69 FEET TO THE TRUE POINT OF BEGINNING, EXCEPT THE EASTERLY 165 FT OF SAID TRACT HERETOFORE CONVEYED TO VICTOR FRANK FARIN BY DEED DATED DECEMBER 7, 1972.

KING COUNTY PARCEL # 0404259111:

THE EASTERLY 165 FEET OF THAT PORTION OF THE NW 1/4 OF THE NE 1/4 (ALSO REFERRED TO AS GOV. LOT NO. 2), SECTION 4, T24N, R5E, W.M., IN KING COUNTY, WA., DESCRIBED AS FOLLOWS: BEGINNING AT THE NE CORNER OF SAID SUBDIVISION; THENCE N 88°44'02" W ALONG THE N LINE OF SAID SUBDIVISION 147.06 FEET TO THE TRUE POINT OF BEGINNING; THENCE CONTINUING N 88°44'02" W 674.34 FT; THENCE S 44°40'07" E 125.41 FEET TO THE THREAD OF KELSEY CREEK; THENCE S 61°23'22" E ALONG SAID CREEK 62.65 FEET; THENCE CONTINUING ALONG SAID CREEK S 69°37'25" E 37.34 FEET; THENCE CONTINUING ALONG SAID CREEK S 66°48'05" E 30.46 FEET; THENCE CONTINUING ALONG SAID CREEK S 34°59'31" E 73.24 FEET; THENCE CONTINUING ALONG SAID CREEK S 68°11'55" E 161.56 FEET; THENCE CONTINUING ALONG SAID CREEK N 87°55'03" E 55.04 FEET; THENCE CONTINUING ALONG SAID CREEK S 83°28'14" E 167.08 FEET; THENCE CONTINUING ALONG SAID CREEK S 82°58'38" E 52.19 FEET; THENCE N 00°40'33" E PARALLEL WITH THE E LINE OF SAID SUBDIVISION 272.69 FEET TO THE TRUE POINT OF BEGINNING

KING COUNTY PARCEL # 0404259112:

THAT PORTION OF THE NW 1/4 OF THE NE 1/4 (ALSO REFERRED TO AS GOV. LOT NO. 2) AND THE NE 1/4 OF THE NE 1/4 (ALSO REFERRED TO AS GOV. LOT 1), SECTION 4, T24N, R5E, W.M., IN KING COUNTY, WA., DESCRIBED AS FOLLOWS: BEGINNING AT THE NW CORNER OF SAID NE 1/4 OF THE NE 1/4; THENCE S 88°44'02" E ALONG THE N LINE OF SAID SUBDIVISION 8.44 FEET TO THE TRUE POINT OF BEGINNING; THENCE N 88°44'02" W 155.50 FT; THENCE S 00°40'33" W PARALLEL WITH THE W LINE OF SAID NE 1/4 OF THE NE 1/4 272.69 FT TO THE THREAD OF KELSEY CREEK; THENCE S 82°58'38" E ALONG SAID CREEK 86.85 FT; THENCE CONTINUING ALONG SAID CREEK S 83°23'10" E 69.54 FT; THENCE N 00°40'33" E 287.88 FT TO THE TRUE POINT OF BEGINNING.

GENERAL NOTES

1. INSTRUMENTATION FOR THIS SURVEY WAS A 3-SECOND LEICA VIVA TS15 SMART POLE TOTAL STATION/RTK GPS.
2. PROCEDURES USED IN THIS SURVEY MEET OR EXCEED STANDARDS SET BY WAC 332-130-090. SURVEY WAS COMPLETED BY A FIELD TRAVERSE.
3. ALL MONUMENTS WERE LOCATED DURING THIS SURVEY UNLESS OTHERWISE NOTED.
4. ENCROACHMENTS NOTED AS "IN" OR "OUT" ARE RELATIVE TO THE SUBJECT PROPERTY
5. FENCE DIMENSIONS ARE GENERALLY TO THE CENTERLINE OF THE FENCE UNLESS OTHERWISE NOTED.
6. ALL DIMENSIONS ARE IN DECIMAL FEET.

BASIS OF BEARINGS

PER THE RECORD OF SURVEY RECORDED IN VOLUME 212 OF SURVEYS, PAGES 149-151, RECORDS OF KING COUNTY WASHINGTON.

ACCEPTED THE BEARING OF N 88°43'59" W FOR SE 7TH PL BASED ON FOUND MONUMENTS IN CASE.

PROJECT INFORMATION

SURVEYOR: PLOG ENGINEERING, PLLC
P.O. BOX 412
RAVENSDALE, WA 98051
PH.: (206) 420-7130

PROPERTY OWNER: ADRIAN AND ELENA OLTEANU
2035 W LAKE SAMMAMISH PKWY SE
BELLEVUE, WA 98008

TAX PARCEL NUMBER: 0424059110, 0424059111, 424059112

PROJECT ADDRESS: 807 128TH AVE SE, BELLEVUE, WA

PARCEL AREA: 173,746.34 (3.989 AC)

REFERENCE SURVEYS

P1 - PLAT OF HERITAGE LAND NO.3, VOL 71, PG 17
R1 - AF# 20060922900005
R2 - AF# 9508179001
R3 - AF# 9203199003

SYMBOL LEGEND

- MONUMENT AS NOTED
- SECTION CORNER
- QUARTER SECTION CORNER
- FOUND REBAR AS NOTED
- SET REBAR AND CAP LS 31976
- FOUND SURFACE MARKER/DISK
- SET SURFACE MARKER/DISK LS 31976

ABBREVIATION LEGEND

MON = MONUMENT
DN = DOWN
SP = SHORT PLAT
BLA = BOUNDARY LINE ADJUSTMENT
DBH = DIAMETER AT BREAST HEIGHT (FT)
DLR = DRIP LINE RADIUS (FT)
APN = ASSESSORS PARCEL NUMBER
AF# = AUDITOR'S FILE NUMBER
(M) = AS MEASURED
(C) = AS CALCULATED
(P) = PER PLAT
(D) = PER DEED
(R#) = PER REFERENCE SURVEY
(H) = HELD

RECORDER'S CERTIFICATE

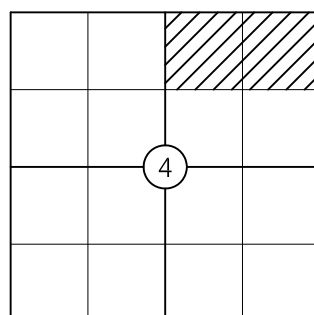
FILED FOR RECORD THIS ____ DAY OF ____, 2021
AT ____ M IN BOOK ____ OF SURVEYS PAGE ____
AT THE REQUEST OF PLOG ENGINEERING, PLLC.

COUNTY AUDITOR DEPUTY COUNTY AUDITOR

AF#

INDEXING INFORMATION

NW & NE 1/4, NE 1/4
SECTION 4 TOWNSHIP 24 NORTH RANGE 5 EAST
WILLAMETTE MERIDIAN, KING COUNTY



SURVEYOR'S CERTIFICATE

THIS MAP CORRECTLY REPRESENTS A SURVEY MADE BY ME OR UNDER MY DIRECTION IN CONFORMANCE WITH THE REQUIREMENTS OF THE SURVEY RECORDING ACT AT THE REQUEST OF ADRIAN AND ELENA OLTEANU IN JULY, 2021

MARK X. PLOG, PLS 31976



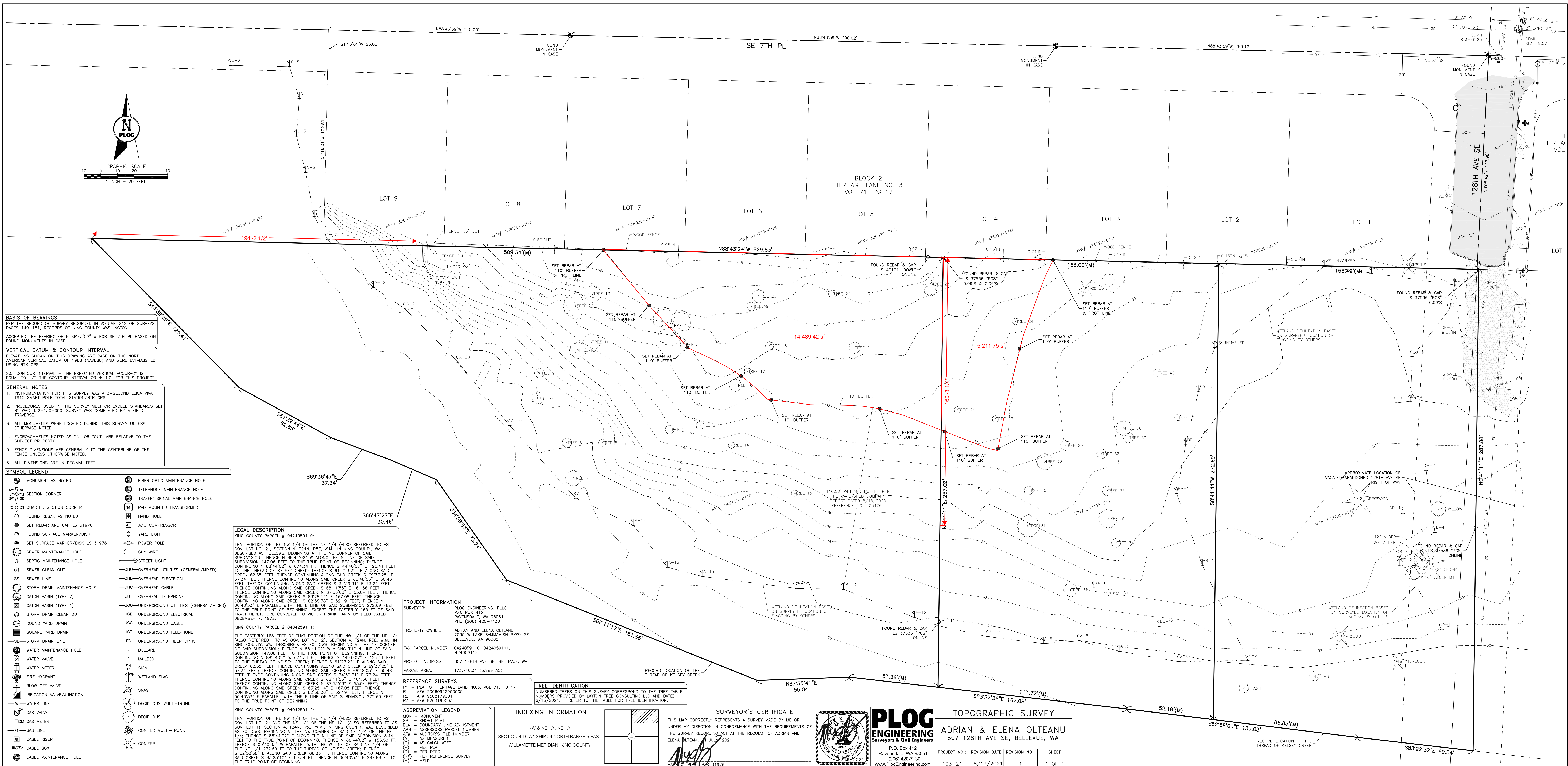
PLOG ENGINEERING
Surveyors & Civil Engineers

P.O. Box 412
Ravensdale, WA 98051
(206) 420-7130
www.PlogEngineering.com

RECORD OF SURVEY

ADRIAN & ELENA OLTEANU
807 128TH AVE SE, BELLEVUE, WA

PROJECT NO.:	REVISION DATE	REVISION NO.:	SHEET
103-21	08/22/2021	1	1 OF 1



***Critical Area Report and Wetland Mitigation and Bank Use Plan
Olteanu Property***

***Parcels# 042405-9110, 042405-9111, and 042405-9112
Bellevue, Washington***

042405-9110, -9111, -9112

Prepared For:

Adrian and Elena Olteanu

Prepared By:

Aquatica Environmental Consulting, LLC
PO Box 308
Duvall, Washington 98019

October 2021

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1.0 INTRODUCTION

This Critical Area Report and Mitigation Plan have been prepared for a proposed single-family residence in the City of Bellevue. The intent of this report is to describe previously delineated wetlands on the undeveloped property and summarize their regulatory constraints and requirements for development of the property in support of a Critical Area Land Use Permit (CALUP) from the City of Bellevue. The applicant proposes to build a single-family home and an entry road to access it from 128th Avenue SE, which will impact wetland and buffer. This report includes a mitigation plan, which will identify compensatory actions for wetland and buffer impacts. Consultant qualifications are included in **Appendix A**.

The project is located on three parcels that total 3.99 acres in size and is located about a half mile east of Interstate 405 north of the Lake Hills Connector (**Figure 1**). Single family homes border the northern property boundary, 128th Avenue SE borders the eastern property boundary, and the southern edge borders undisturbed wetlands associated with Kelsey Creek in a City-owned Park (Kelsey Creek Park). The property is in the NE ¼ of Section 4, Township 24 North, and Range 5E. W.M. These parcels are located in the Water Resource Inventory Area #8, the Cedar-Sammamish Watershed and are in the Kelsey Creek drainage basin.



Figure 1. Vicinity Map (King County 2021)

2.0 CRITICAL AREAS and EXISTING CONDITIONS

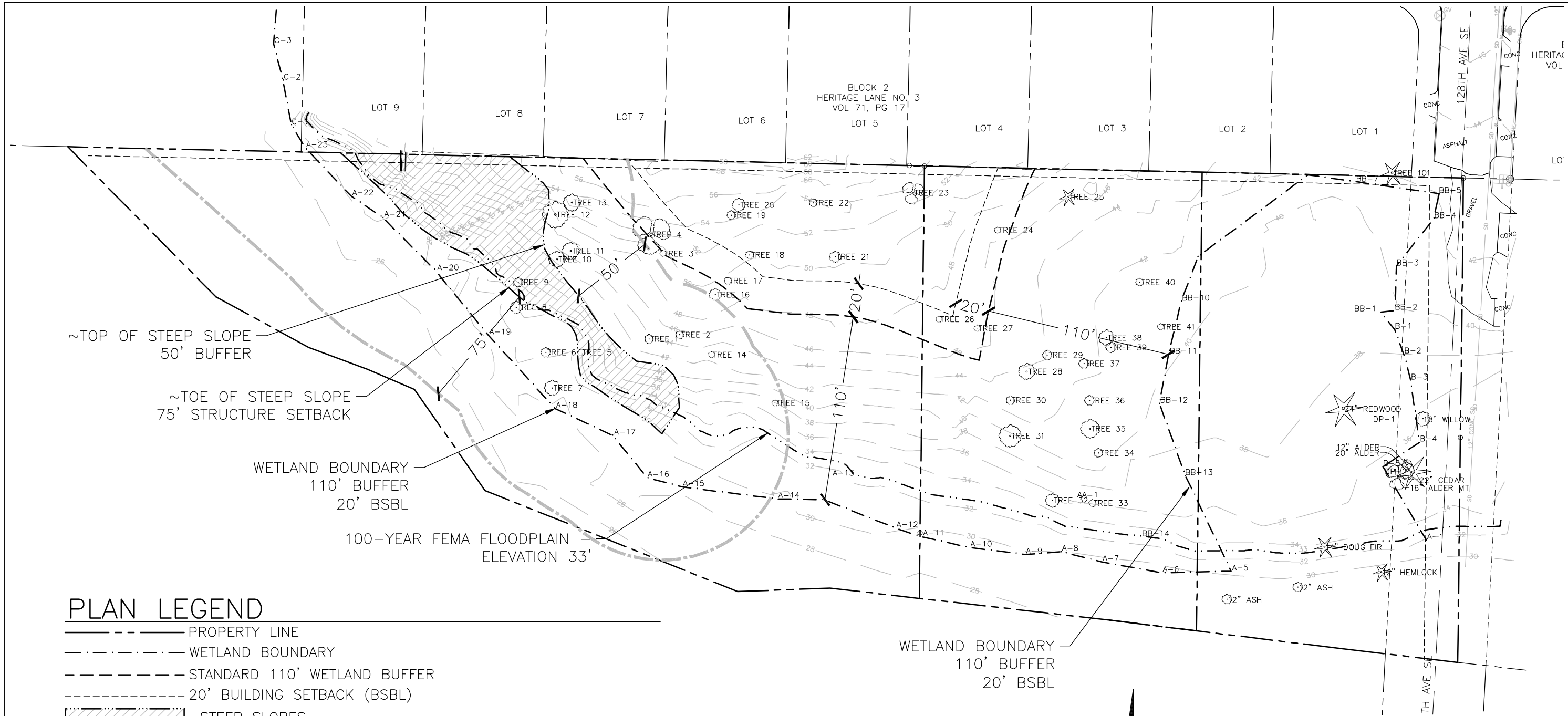
The project site has several critical areas on-site. Wetlands are present along the southern property line as well as on the eastern portion of the property. Kelsey Creek is located off-site to the south and there are regulatory steep slopes in the western end of the site. The 100-year floodplain of Kelsey Creek also extends onto the site, and consequently the property is within the shoreline jurisdiction. Critical areas are described in more detail below.

2.1 Wetlands

Wetlands on the property were delineated by The Watershed Company and described in a Wetland Delineation Report dated August of 2020. One Category I wetland was identified on the property and extends off-site to the northwest, west and south (**Figures 2 and 3**). This wetland is associated with Kelsey Creek, which is located off-site to the south. This wetland has three vegetation classes present: palustrine forested, scrub shrub and emergent. Hydrology is from a high groundwater table, seasonal flooding, and the wetland also receives stormwater from surrounding urban areas. Soils near the wetland delineation edge are a sandy loam or clay loam.



Photo 1. Wetland A to the south of the project area (no disturbance planned in this area)



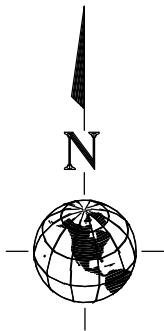
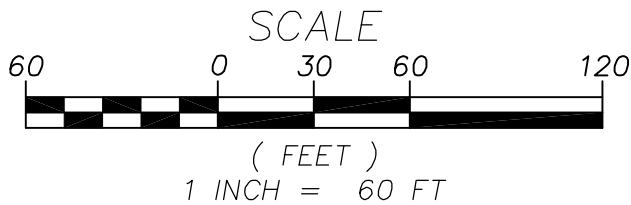
PLAN LEGEND

- PROPERTY LINE
- WETLAND BOUNDARY
- STANDARD 110' WETLAND BUFFER
- 20' BUILDING SETBACK (BSBL)
- ~STEEP SLOPES
- 50' STEEP SLOPE BUFFER (FROM TOP)
- 75' STEEP SLOPE STRUCTURE SETBACK (FROM TOE)
- 100-YEAR FEMA FLOODPLAIN

TOTAL CRITICAL AREA SQUARE FOOTAGE

WETLAND	76,010 SF
WETLAND BUFFER	78,091 SF
WETLAND SETBACK	7,139 SF
SLOPE	8,535 SF
SLOPE BUFFER	8,614 SF
SLOPE TOE SETBACK	31,461 SF
100-YEAR FLOODPLAIN	64,902 SF

WETLAND BOUNDARY
110' BUFFER
20' BSBL



NOTES

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AQUATICA

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P.O. BOX 308
DUVALL, WA 98019

T 425.802.8988

EXISTING CONDITIONS
OLTEANU PROPERTY
807 128TH AVE. SE
BELLEVUE, WASHINGTON
PARCELS 0424059110, -9111, -9112

DRAWN BY KG	CHECKED BY TO
SCALE AS NOTED	DATE 10.20.21
PROJECT NO. 21-368	
FIGURE 3 OF 9	

Aquatica Environmental Consulting delineated a small portion of the wetland that extends from the western corner of the property where The Watershed Company delineation ended up to SE 7th Street. This was completed to determine the wetland location south of SE 7th Street, so that the feasibility of alternative access points to the property could be explored. The wetland in this area is contiguous with the on-site wetland and conditions similar to those described in The Watershed Company 2020 report. This section of the delineation is documented in wetland datasheets included in **Appendix B**. The methodology used to delineate this area was the same as described in The Watershed Company report.

The parcels are vegetated with a combination of invasive and native vegetation. Vegetation in the tree layer of Wetland A includes species of willow (*Salix* spp.) Oregon ash (*Fraxinus latifolia*), red alder (*Alnus rubra*), black cottonwood, and Sitka spruce (*Picea sitchensis*). Common shrubs include Douglas' spiraea (*Spiraea douglasii*), clustered rose (*Rosa pisocarpa*), black twinberry (*Lonicera involucrata*), and salmonberry (*Rubus spectabilis*). The herbaceous layer includes lady fern (*Athyrium filix-femina*), reed canary grass (*Phalaris arundinacea*), and creeping buttercup (*Ranunculus repens*). Native species dominate within most of the wetland. However, the on-site portion of the wetland adjacent to 128th Avenue SE is dominated by reed canarygrass, a noxious weed.

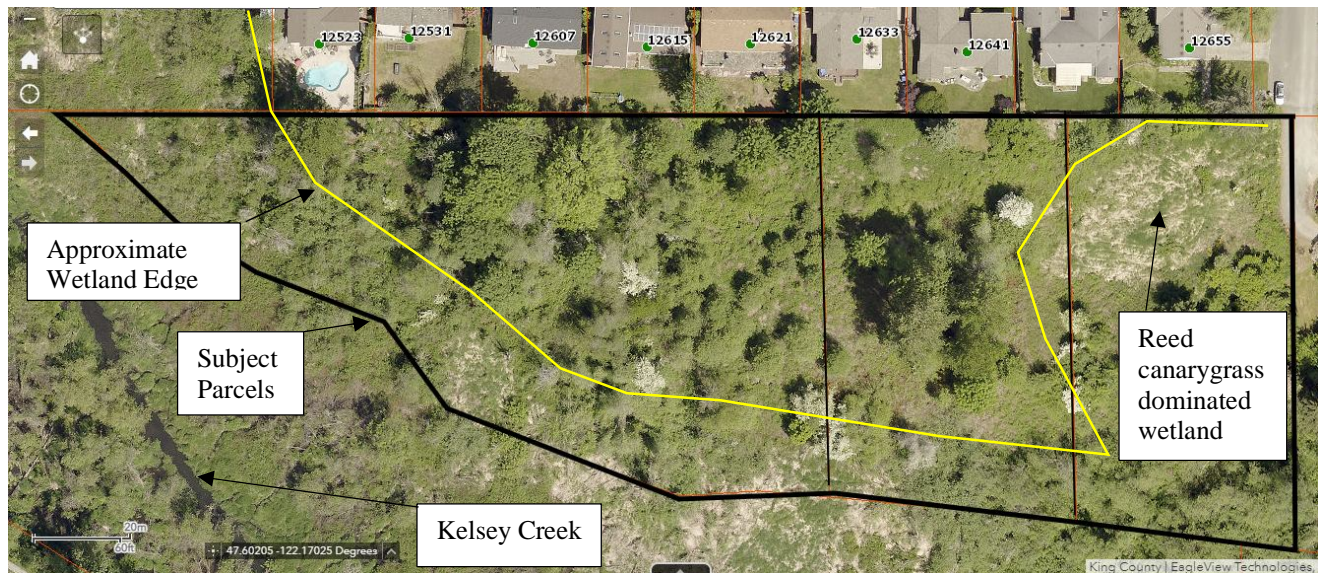
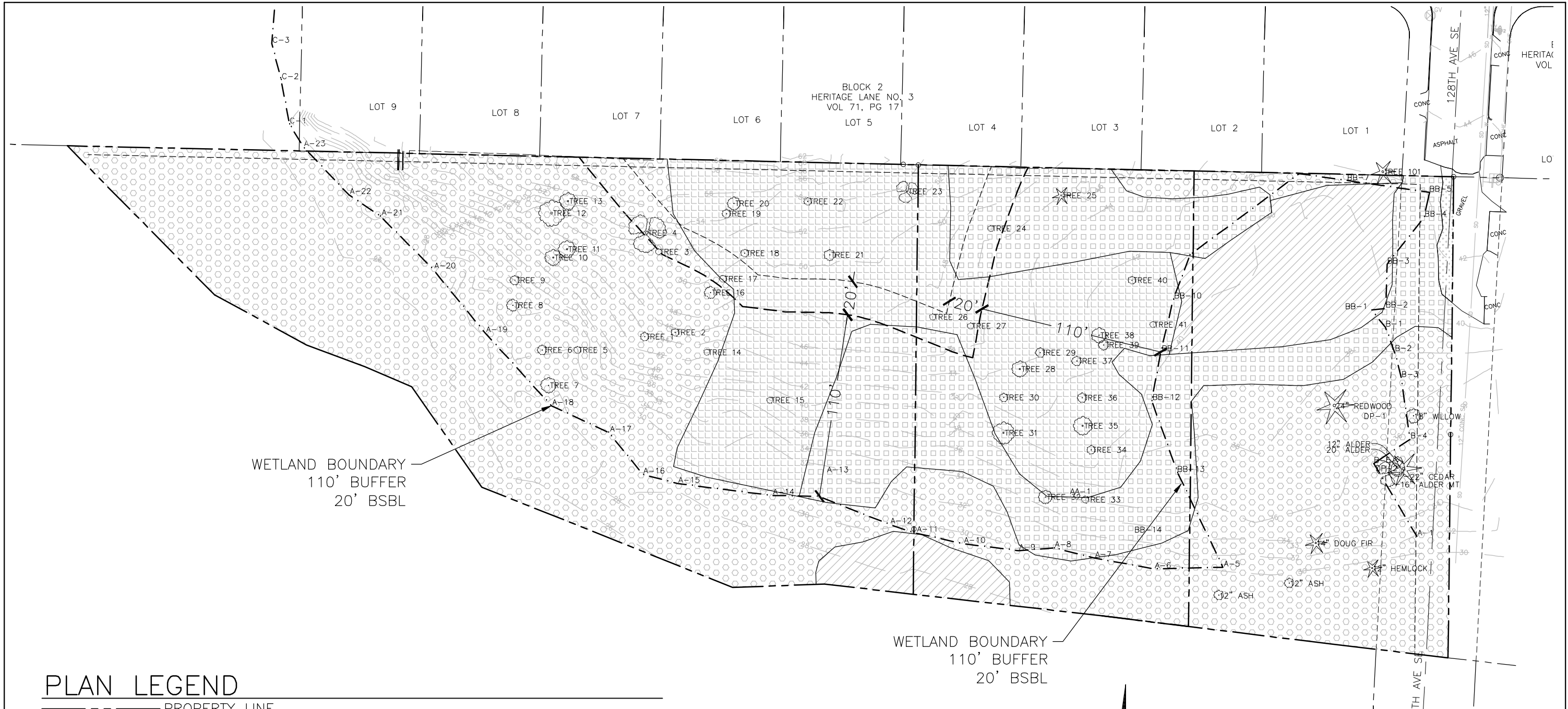


Figure 2. King County Aerial Photograph (Source: King County, 2021)

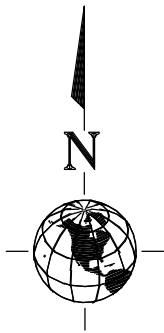
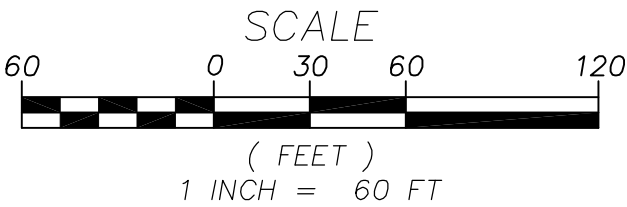
The western third of the buffer on the property is vegetated primarily with native species. Common plants in the buffer in this area include bigleaf maple (*Acer macrophyllum*), bitter cherry (*Prunus emarginata*), Oregon ash, Sitka willow (*Salix sitchensis*), black cottonwood, sword fern (*Polystichum munitum*), oceanspray (*Holodiscus discolor*), osoberry (*Oemleria cerasiformis*), and western hazelnut (*Corylus cornuta*). The remaining buffer area on the property is densely vegetated with invasive Armenian blackberry (*Rubus armeniacus*) where it forms dense thickets with no other vegetation or where it dominates the forested understory. **Figure 4** includes a map of the vegetation on the property.

21-368-10-20-21.DWG



PLAN LEGEND

- PROPERTY LINE
- WETLAND BOUNDARY
- STANDARD 110' WETLAND BUFFER
- 20' BUILDING SETBACK (BSBL)
- NATIVE VEGETATION – 93,204 SF
- REED CANARYGRASS – 13,326 SF
- SCATTERED TREES WITH BLACKBERRIES AND FERNS IN THE GROUNDCOVER LAYER – 36,272 SF
- DENSE BLACKBERRIES – 30,387 SF
- GRAVEL – 558 SF



NOTES

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<div>AQUATICA</div> <div>ENVIRONMENTAL CONSULTING, LLC</div> <div>P.O. BOX 308 DUVALL, WA 98019</div> <div>T 425.802.8988</div>	<div>EXISTING VEGETATION</div> <div>OLTEANU PROPERTY</div> <div>807 128TH AVE. SE</div> <div>BELLEVUE, WASHINGTON</div> <div>PARCELS 0424059110, -9111, -9112</div>	<div>DRAWN BY</div> <div>KG</div>	<div>CHECKED BY</div> <div>TO</div>
		<div>SCALE</div> <div>AS NOTED</div>	<div>DATE</div> <div>10.20.21</div>
		<div>PROJECT NO.</div> <div>21-368</div>	
		<div>FIGURE</div> <div>4</div>	<div>OF</div> <div>9</div>



Photo 2. Wetland A buffer with Armenian blackberry in the understory

Wetland buffer widths are assigned according to the overall wetland rating and habitat score as assessed using the Wetland Rating System for Western Washington (DOE, 2014), as well as the site's development status. This wetland was classified as a Category I wetland with seven habitat points using the DOE rating system. According to LUC 20.25H.075, the property is classified as undeveloped, which assigns a 110-foot wetland buffer and a 20-foot structure setback. **Figure 3** depicts the wetland boundary and buffer setback. **Table 1** summarizes the wetland attributes.

Table 1. Rating System Summary

	FUNCTION		
	Improving Water Quality	Hydrologic	Habitat
Site Potential	High	Moderate	High
Landscape Potential	Moderate	High	Low
Value	High	High	High
Score	8	8	7
Total Points	23, Category I		

2.2 Stream

Kelsey Creek is located off-site to the south in Kelsey Creek Park, which is adjacent to the southern and western property boundaries. Kelsey Creek is a fish bearing stream and classified as Type F by the Bellevue LUC 20.25H.075(B)(2). Undeveloped sites require a Type F stream be provided with a buffer of 100 feet (LUC 20.25H.075(C)(1.a.ii) and a structure setback of 20 feet (LUC 20.25H.075(D)). At its closest point, the stream is about 50 feet from the western property corner. The majority of the stream is within 150-180 feet from the southern property boundary. Per The Watershed Company report, Kelsey Creek was not delineated, as the wetland has the more restrictive buffer. See **Tables 2** and **3** for critical area square footage and buffer summaries.

2.3 Shoreline Overlay and Floodplain

The property is within the Shoreline Overlay area, which includes the adjacent wetlands that extend onto the site and are connected to the Kelsey Creek floodplain, as well as the 100-year floodplain. The 100-year flood plain extends onto this property, as is shown on **Figure 3**, based on the FEMA flood map elevation of 33 feet (FEMA, 2021). There is no clearing, grading, or development proposed in the 100-year floodplain. This property has an Urban Conservation shoreline designation.

2.4 Steep Slopes

Steep slopes are present on the western end of the site. Slopes more than 40% are regulated by LUC 20.25H.120 and require a top-of-slope buffer of 50 feet and a toe-of-slope structure setback of 75 feet. Steep slopes on the site have a slope up to 19 degrees (34% slope). Development is not proposed in steep slopes, their buffers, or slope setbacks.

Table 2. Total Critical Area

	Area in SF
Wetland	76,010
Wetland Buffer	78,091
Wetland Setback	7,139
Slope	8,535
Slope Buffer	8,614
Slope toe setback	31,461
100-year floodplain	64,902

Table 3. Critical Area Buffers and Setbacks

	Category	Standard Buffer (feet)*	Structure Setback (feet)
Wetland A	I	110	20
Stream	Type F	100	20
Slope	n/a	50 (from top)	75 (from toe)

*This is the undeveloped site buffer

3.0 PROPOSED PROJECT

The applicant is proposing to construct a new home and access driveway on the property. The home is proposed outside of critical areas and their buffers. The only feasible access point to the proposed homesite is from 128th Avenue SE, which will require crossing a small area of Wetland A and impacting a portion of its buffer for access to the home site and fire safety access turnaround. Wetland structure setback modification at the outer edge of the wetland setback is proposed. Development in the wetland structure setback is proposed for a driveway and sport court. **Table 4** summarizes these impacts, and proposed impacts are discussed in more detail in the following sections.

Table 4. Proposed Impacts

	Driveway	Structure	Other
Wetland Fill	1,943 sf 0.04 ac	0	0
Wetland Buffer Impacts	4,888 sf 0.11 ac	0	0
Wetland Structure Setback	655 sf Crosses setback for access	48 sf (house) Reducing by 2'10"	389 sf (sport court) Reducing by 16'9"

3.1 Code Section Alterations

The project is proposing wetland fill and modifying wetland buffers to accommodate site access, an allowed use per LUC 20.25H.055(B). This will require modification of the standard wetland buffer (LUC 20.25H.055(D) and wetland setback (LUC 20.25H.055(E). Additional modifications of the setback are proposed for small impacts into this area for the house and outdoor uses. The following sections address these proposed impacts as well as mitigation sequencing, LUC performance standards, cumulative impacts and habitat assessment.

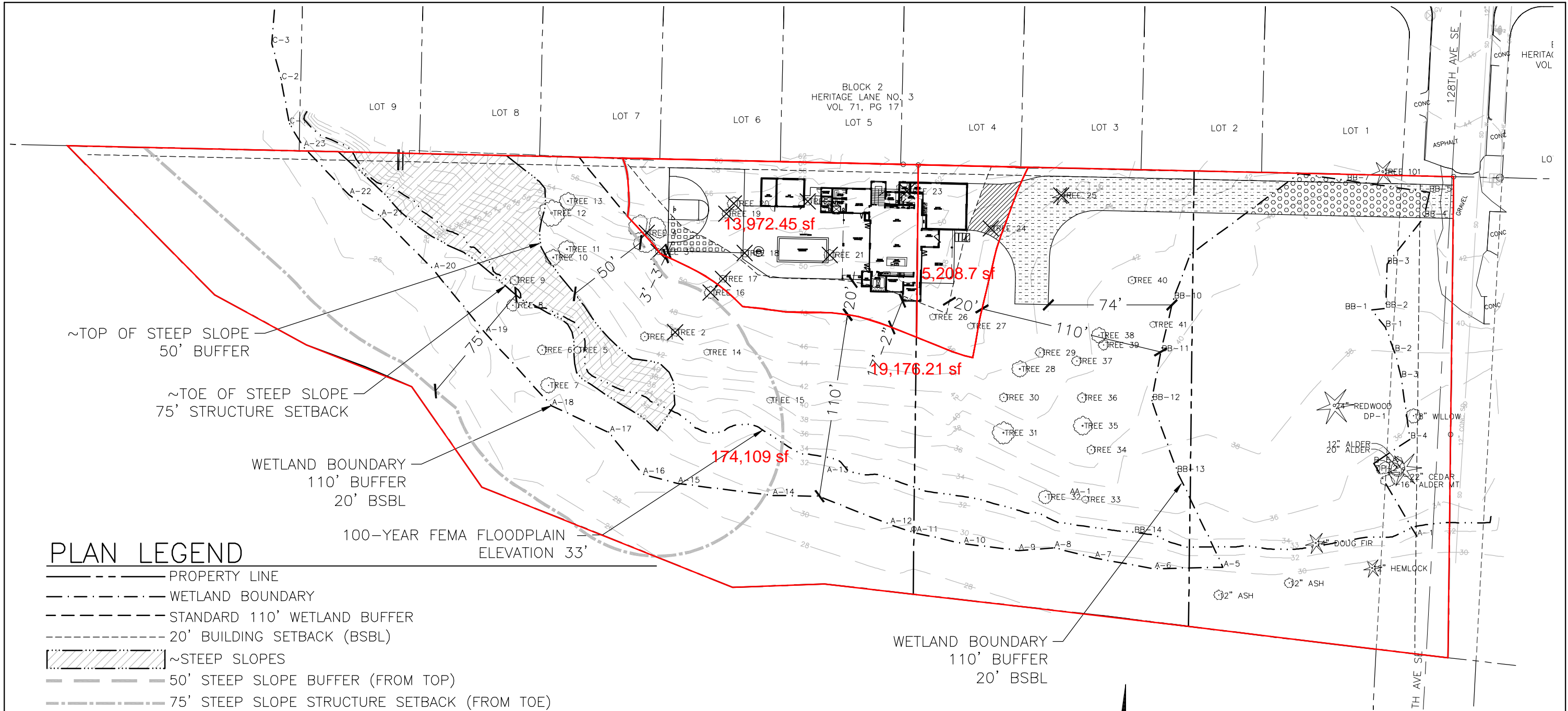
3.2 Environmental Sequencing

The LUC 20.25H.215 (A-D) requires that projects utilize environmental sequencing to avoid, minimize, and mitigate project impacts. The code section is below in regular type, followed by an explanation of how the project meets each provision, in italics.

A. Avoiding the impact altogether by not taking a certain action or parts of an action;

Avoidance

Project impacts due to the driveway cannot be avoided. There is no alternative access to the buildable area outside of wetland and wetland buffers. Single family homes are located to the north of the building site, which does not allow access directly from the north. As requested in the pre-application meeting, the off-site, City-owned parcel to the northwest was investigated to determine if access could occur from SE 7th Place. Wetlands on the City parcel to the northwest were delineated and there is no potential driveway location that would not impact wetland. Further, the wetland in the northwest area is vegetated with native species, has a forested vegetation layer, and has ponded water even in summer. Impacts at this location would be greater than at the proposed location from 128th Avenue NE. Access

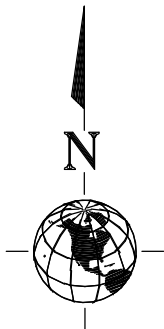
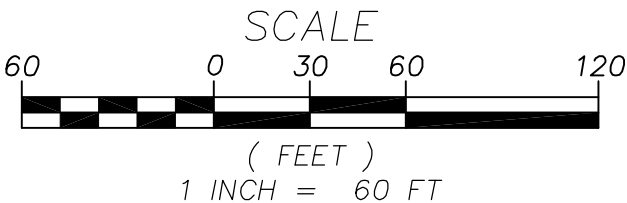


PLAN LEGEND

- PROPERTY LINE
- WETLAND BOUNDARY
- STANDARD 110' WETLAND BUFFER
- 20' BUILDING SETBACK (BSBL)
- ~STEEP SLOPES
- 50' STEEP SLOPE BUFFER (FROM TOP)
- 75' STEEP SLOPE STRUCTURE SETBACK (FROM TOE)
- 100-YEAR FEMA FLOODPLAIN
- TREES TO BE REMOVED – REMOVED TREES IN BUFFER AREAS SHALL BE CONVERTED TO SNAGS AT A HEIGHT LESS THAN THE DISTANCE TO NEW INFRASTRUCTURE. LOGS FROM THE OTHER REMOVED TREES SHALL BE RETAINED ON-SITE AS NEEDED TO PROVIDE LARGE WOODY DEBRIS FOR WETLAND AND BUFFER ENHANCEMENT.

IMPACT LEGEND

- WETLAND IMPACT (DRIVEWAY) – 1,943 SF (0.04 ACRES)
- WETLAND BUFFER IMPACT (DRIVEWAY) – 4,888 SF (0.11 ACRES)
- STRUCTURE SETBACK IMPACT (HOUSE) – 48 SF
- STRUCTURE SETBACK IMPACT (DRIVEWAY/PAVING) – 655 SF
- STRUCTURE SETBACK IMPACT (SPORT COURT) – 389 SF
- TOTAL STRUCTURE SETBACK IMPACT – 1,092 SF



NOTES

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		<div>FIGURE</div> <div>5 OF 9</div>	

through the City parcel would also disturb steep slopes and the native buffer vegetation in the western third of the site. See Photos 3 and 4, respectively the proposed driveway location from 128th Avenue NE and the northeastern edge of the City-owned parcel.



Photo 3. Photo of proposed driveway location through the reed canarygrass dominated portion of Wetland A, taken from 128th Avenue NE, looking to the northwest



Photo 4. Forested wetland area investigated for potential access from SE 7th Place. Photo taken from SE 7th Place looking to the south at Wetland A

B. Minimizing impacts by limiting the degree or magnitude of the action and its implementation, by using appropriate technology, or by taking affirmative steps, such as project redesign, relocation, or timing, to avoid or reduce impacts;

Minimization

Impacts were minimized by locating the proposed driveway in a disturbed part of the wetland and buffer. To minimize wetland impacts, the road through the wetland will be constructed without side slopes along the south edge of the road to prevent additional wetland fill beyond the driveway width. This may require the construction of short walls or other means to prevent additional fill beyond the required road width for access. Driveway widths and the hammerhead as proposed are the minimum allowed for safe access per fire comments received in the pre-application meeting.

C. Performing the following types of mitigation (listed in order of preference):

1. Rectifying the impact by repairing, rehabilitating, or restoring the affected environment;

Project impacts proposed are permanent and will not be repaired, rehabilitated or restored. Mitigation for project impacts is provided as noted below under C(3). The project is not proposing any temporary impacts.

2. Reducing or eliminating the impact over time by preservation and maintenance operations during the life of the action; or

The impacts over time will be eliminated through implementation of the mitigation plan, and through a five-year maintenance and monitoring period. A Mitigation Monitoring and a Vegetation Plan, which detail how project impacts will be monitored to ensure success and protection of on-site critical areas, are also provided.

3. Compensating for the impact by replacing, enhancing, or providing substitute resources or environments;

Mitigation for project impacts will include a combination of on-site wetland and buffer enhancement and as well as wetland reestablishment through mitigation at the Keller Farm Mitigation Bank. On-site mitigation is proposed to occur through invasive plant removal and extensive native plantings. On- and off-site mitigation are detailed in the mitigation and bank use plan sections.

D. Monitoring the hazard or other required mitigation and taking remedial action when necessary.

A Monitoring Contingency Plan is provided in this report.

3.3 Performance Standards

LUC 20.25H.100 requires a set of general performance standards for development near wetlands and streams. These include management of project lighting, noise, toxic runoff, critical area intrusion measures, and limitations on chemical use in vicinity of critical areas. The code section is in regular type, how the project meets these is in italics.

LUC 20.25H.100 Development on sites with a wetland, Type S or F stream or associated critical area buffer shall incorporate the following performance standards in design of the development, as applicable:

A. Lights shall be directed away from the wetland.

The project will minimize light impacts into the wetland and stream buffers. The project is proposing planting species that have a dense evergreen habit on the edges of the development area and driveway to minimize light intrusion from cars. Outdoor lighting on the house will meet the recommendations of the International Dark Sky Association.

B. Activity that generates noise such as parking lots, generators, and residential uses shall be located away from the wetland or any noise shall be minimized through use of design and insulation techniques.

The proposed home will be adequately insulated to avoid noise generation. All residential uses are occurring outside of wetland buffers, with the exception of the driveway. All development is occurring adjacent to existing disturbance, a residential subdivision.

C. Toxic runoff from new impervious area shall be routed away from the stream.

Runoff from new impervious surfaces will not be directly discharged to wetlands or streams but will be treated and dispersed according to the required stormwater manual.

D. Treated water may be allowed to enter the wetland critical area buffer.

Treated stormwater will be dispersed into buffers on-site, as there is no alternative location. However, there will not be direct discharges directly to wetlands or streams.

E. The outer edge of the wetland critical area buffer shall be planted with dense vegetation to limit pet or human use.

The proposed mitigation plan is proposing dense plantings adjacent to all developed areas, except in the western portion of the site, which is already densely vegetated.

F. Use of pesticides, insecticides and fertilizers within 150 feet of the edge of the stream critical area buffer shall be in accordance with the City of Bellevue's "Environmental Best Management Practices," now or as hereafter amended.

Use of pesticides, insecticides and fertilizers within 150 feet of the edge of the critical area buffers shall be in accordance with the City of Bellevue's "Environmental Best Management Practices," now or as hereafter amended. Due to the extensive buffers on-site, this will apply to the entire property.

G. All applicable standards of Chapter 24.06 BCC, Storm and Surface Water Utility Code, are met.

All applicable standards of Chapter 24.06 BCC, Storm and Surface Water Utility Code will be met.

LUC20.25H.055 (B) allows for the construction of new private access roads and driveways in wetlands and buffer when the performance standards of LUC20.25H.055 (C)(2) are met, as described below.

a. New or expanded facilities and systems are allowed within the critical area or critical area buffer only where no technically feasible alternative with less impact on the critical area or critical area buffer exists. A determination of technically feasible alternatives will consider:

- i. The location of existing infrastructure;
- ii. The function or objective of the proposed new or expanded facility or system;
- iii. Demonstration that no alternative location or configuration outside of the critical area or critical area buffer achieves the stated function or objective, including construction of new or expanded facilities or systems outside of the critical area;
- iv. Whether the cost of avoiding disturbance is substantially disproportionate as compared to the environmental impact of proposed disturbance; and
- v. The ability of both permanent and temporary disturbance to be mitigated.

The above alternatives are discussed and addressed below

b. If the applicant demonstrates that no technically feasible alternative with less impact on the critical area or critical area buffer exists, then the applicant shall comply with the following:

i. Location and design shall result in the least impacts on the critical area or critical area buffer;

The location was determined to have the least impact on critical areas and buffers, as noted in the mitigation sequencing section (Section 3.2). Proposed impacts are not avoidable and necessary to provide access to the area of the property unconstrained by wetlands, buffers, steep slopes and floodplain. No other location will provide the intended function with less impact.

ii. Disturbance of the critical area and critical area buffer, including disturbance of vegetation and soils, shall be minimized;

Limits of work will be staked out prior to construction and wetlands and buffer construction limits will be protected with erosion control measures including compost socks or similar erosion control methods and construction fencing to limit impacts beyond the impact areas.

iii. Disturbance shall not occur in habitat used for salmonid rearing or spawning or by any species of local importance unless no other technically feasible location exists;

Disturbance is not proposed in habitat used by salmonids for rearing, spawning, or by any species of local importance. The part of the wetland proposed to be impacted is degraded and does not support habitat for the above-described species. The area of the site where impacts are occurring is outside of the 100-year floodplain and surface hydrology is not contiguous between the impacted wetland and Kelsey Creek.

iv. Any crossing over of a wetland or stream shall be designed to minimize critical area and critical area buffer coverage and critical area and critical area buffer disturbance, for example by use of bridge, boring, or open cut and perpendicular crossings, and shall be the minimum width necessary to accommodate the intended function or objective; provided, that the Director may require that the facility be designed to accommodate additional facilities where the likelihood of additional facilities exists, and one consolidated corridor would result in fewer impacts to the critical area or critical area buffer than multiple intrusions into the critical area or critical area buffer;

Impacts were minimized by the proposed location at the edge of the wetland adjacent to existing disturbance. This crossing is perpendicular and situated to avoid bisecting and dividing the wetland. The width of the driveway is the minimum required by the City to allow for fire access.

v. All work shall be consistent with applicable City of Bellevue codes and standards;

All work will be consistent with applicable City of Bellevue codes and standards.

vi. The facility or system shall not have a significant adverse impact on overall aquatic area flow peaks, duration or volume or flood storage capacity, or hydroperiod;

Impacts are occurring at the outer edge of the wetland in an area with minimal to no ponding and is outside of the floodplain. Adverse impacts to flow, flood dynamics and hydroperiods are not anticipated.

vii. Associated parking and other support functions, including, for example, mechanical equipment and maintenance sheds, must be located outside critical area or critical area buffer except where no feasible alternative exists; and

No parking, mechanical equipment, maintenance sheds or similar uses are proposed in the wetland or buffer.

viii. Areas of new permanent disturbance and all areas of temporary disturbance shall be mitigated and/or restored pursuant to a mitigation and restoration plan meeting the requirements of LUC 20.25H.210.

A mitigation plan meeting the requirements of LUC20.25H.210 is included.

3.4 Structure Setback Modification

The project is proposing to modify the 20' wetland structure setback, as detailed in Table 4. LUC 20.25H.095(E)4, allows for structure setback modification to be waived or modified if the following code requirements, a-d, can be demonstrated.

a. Water quality, or slope stability as documented in a geotechnical report, will not be adversely affected;

As noted by the project geologist, (Cobalt Geosciences, 2021), water quality and slope stability are not expected to be adversely affected.

b. Encroachment into the structure setback will not disturb habitat of a species of local importance within a critical area or critical area buffer;

The proposed driveway is in the setback, as it is necessary to cross the setback to access the building location. This is occurring adjacent to the backyards of an existing subdivision, in a location that is not expected cause habitat disruptions. The small area of the proposed home extends less than three feet into the setback, in an area of existing disturbance and adjacent to a degraded area proposed for enhancement. The sport court is proposed adjacent to a densely forested buffer as well, which will provide screening for the proposed development. There are no known species of local importance that use the wetland buffer. Several species of fish use Kelsey Creek, located within Wetland A, although the main stream channel is located at least 300 feet from the proposed house. The projects design and mitigation measures will prevent degradation to water quality and hydrology impacts, to protect these species. Construction of the sport court must be done outside the rainy season and construction fencing and erosion control measures must be in place to prevent erosion into the buffer.

- c. Vegetation in the critical area and critical area buffer will not be disturbed by construction, development, or maintenance activities and will be maintained in a healthy condition for the anticipated life of the development; and

The purpose of the wetland structure setback is to protect the wetland and buffer during construction to prevent damage to buffer vegetation, as well as long-term, to allow for maintenance and circulation around the proposed home to prevent long term buffer impacts. The greatest potential risk to vegetation is due to grading of the sport court in the wetland setback near the edge of the wetland buffer. Two trees (#3 and #4) are present in this area. However, due to their fair condition and proximity to the proposed home, these trees are proposed for removal, per recommendations of the consulting arborist (Layton 2021). These trees will be replaced with long lived evergreen trees in the enhanced buffers (see mitigation plan). The buffer edge will be protected with construction fencing and erosion control measures to prevent damage to buffer vegetation during the construction process.

The small area of the building in the setback reduces the setback by less than three feet, which will still allow for building maintenance and construction without added risks.

- d. Enhancement planting on the boundary between the structure setback and the critical area buffer will reduce impacts of development within the structure setback.

Enhancement plantings along the development edge are proposed as described in the mitigation section of this report. Areas of invasive vegetation will be removed, and native species will be installed to screen the development and enhance the structural and biodiversity of the buffer to reduce impacts from the project on wetland buffers.

3.5 Cumulative Impacts

Impacts on individual projects often appear minor, but cumulatively, especially in rapidly urbanizing areas, they can cause significant stressors on the environment. This project is required to mitigate project impacts and will do so through City code required provisions to manage stormwater and mitigate the functions lost due to project impacts. Likewise, negative cumulative impacts, such as those that could occur from other wetland impacts in the area to hydrology, water quality and wildlife habitat from other projects in the area are not expected, as these will be required to be mitigated.

Use of the mitigation bank for project impacts could also cause cumulative impacts to local resources, if it were to be allowed without ensuring that the bank was able to fully mitigate for all wetland functions at an off-site location. However, this is not anticipated as bank use is highly regulated and subject to interagency oversight throughout the approval and long-term monitoring processes.

3.6 Habitat Assessment

A habitat assessment that meets the requirements of LUH 20.25H.165 is provided below and addresses on-site vegetation, sensitive species nearby, and potential impacts and mitigation measures and how these will affect habitat.

Vegetation in the western third of the site is forested with native trees, shrubs, and groundcovers, as described in Section 2.1. The southern edge of the property that includes Wetland A is predominantly vegetated with native vegetation. However, the remainder of the uplands on this site are densely vegetated with extensive areas of invasive Armenian blackberry and the wetland adjacent to 128th Avenue NE is dominated by invasive reed canarygrass.

The Washington Department of Fish and Wildlife Priority Habitats and Species (PHS) database was searched for the site and surrounding vicinity. The PHS database lists the following salmonids as utilizing Kelsey Creek: sockeye salmon (*Oncorhynchus nerka*), coho salmon (*Oncorhynchus kisutch*), fall Chinook salmon (*Oncorhynchus tshawytscha*), resident coastal cutthroat trout (*Oncorhynchus clarkii*), and winter steelhead (*Oncorhynchus mykiss*). Kelsey Creek is listed as a biodiversity corridor and the wetlands are listed as priority habitats. The project is not proposing any impacts to Kelsey Creek or its buffer, although the site does provide adjacent terrestrial and seasonal wetland habitat that contributes to the wildlife value, and water quality and hydrologic functions that support the adjacent Kelsey Creek system. Construction is located as far to edge of the depicted biodiversity corridor as site conditions permit.

As described in more detail in the functional value assessment (**Section 6.0**), the project is expected to positively impact on-site wetland habitat, after mitigation measures that would provide some benefit to these species are implemented. Portions of the on-site wetland and buffers are degraded and replacing invasive plants with native plants will increase the ability wetland and buffer to provide structural and biological diversity and habitat value. Because of adherence to stormwater management requirements, the project is not expected to diminish the site's ability to attenuate stream flows. No impact to stream bank stability is anticipated. Federal and State management recommendations for species relevant to this project include the enhancement of the riparian buffer to prevent erosion, enhance water quality and manage the water flow. The project proposes to implement enhancement of the on-site wetland and buffers to meet these recommendations, which are presented in the mitigation plan as removing invasive plants and installing native species in the wetland and buffer areas. On a watershed scale, the restoration actions proposed using the Keller Farm Mitigation Bank are expected to have a significant functional lift to fish habitat in the watershed.

Direct impacts include constructing a driveway through the wetland and buffer (see Table 4). This project does not propose any direct stream impacts and no indirect impacts to streams are expected. Indirect impacts as a result of implementation of the mitigation plan are expected to be beneficial, as noted in the functional value assessment (**Section 6.0**). As vegetation on the site matures, it will contribute to a diversity of insects that may support fish in the off-site stream and support species dependent upon the biological interface of aquatic and riparian systems. Armenian blackberry is abundant on this project site. This species is known for having shallow roots that are not effective and binding soil and have little value in preventing erosion. Removal and replacement with fibrous-rooted native species will provide long-term soil stability and erosion control on the site.

Avoidance, minimization and mitigation measures are summarized In **Section 3.2**, Environmental Sequencing. The mitigation plan in **Section 4.0** discusses mitigation plan details and the Bank Use plan in **Section 5.0** discusses wetland mitigation details. Site impacts are proposed to occur in areas of degraded vegetation and adjacent to an existing subdivision to the north, while avoiding wetlands, streams, and their buffers to the extent possible. Due to the inability to access the unconstrained portion of the site, impacts were unavoidable and are proposed. Mitigation sequencing was conducted to determine the most appropriate mitigation measures. A combination of on-site restoration of degraded

wetlands and buffers and use of an off-site mitigation bank is proposed to provide both on-site enhancement and high-quality wetland mitigation in a valuable off-site location.

The Project has planned for ongoing management to protect the enhanced wetland, streams, and buffers. Included is a proposed 5-year monitoring plan (**Section 8**), as well provisions for Vegetation Management and Contingency Measures (**Section 9**).

4.0 ON-SITE MITIGATION

Impacts are proposed to be mitigated through a combination of on-site and off-site mitigation (banking) measures. On-site, wetland and buffer enhancement measures will include the removal of invasive species, planting of native trees, shrubs, and groundcover plants. The impacts over time will be mitigated through these actions as well as a five-year maintenance and monitoring period for on-site enhancement treatments.

The project site has adequate opportunities and area to mitigate for wetland buffer impacts. LUC 20.25H.105(C)(3) requires that buffer areas be mitigated at a 1:1 ratio. The project is proposing a mitigation ratio of 2.5:1 to mitigate for impacts to the buffer and structure setback. Due to the linear impacts of the road, it was determined that additional area should be enhanced to provide a native, vegetated buffer adjacent to all developed areas for increased screening of the development. The project is proposing buffer mitigation that exceeds City requirements.

LUC 20.25H105(C) and (D) requires that wetland acreage be replaced at a 6:1 replacement to impact ratio for Category I wetlands if the replacement is on-site and in-kind, and the code also allows for the possibility of wetland enhancement as mitigation, although mitigation ratios are not provided. State guidance for wetland enhancement for Category I wetland impacts is 16:1 enhancement to impact ratio (DOE, 2021). The property does not have adequate opportunities for wetland creation, and it has insufficient degraded wetlands to meet the standard enhancement ratios. The project is proposing to enhance buffers and the available degraded wetland as noted in **Table 5**, below.

Table 5. On-Site Mitigation Summary

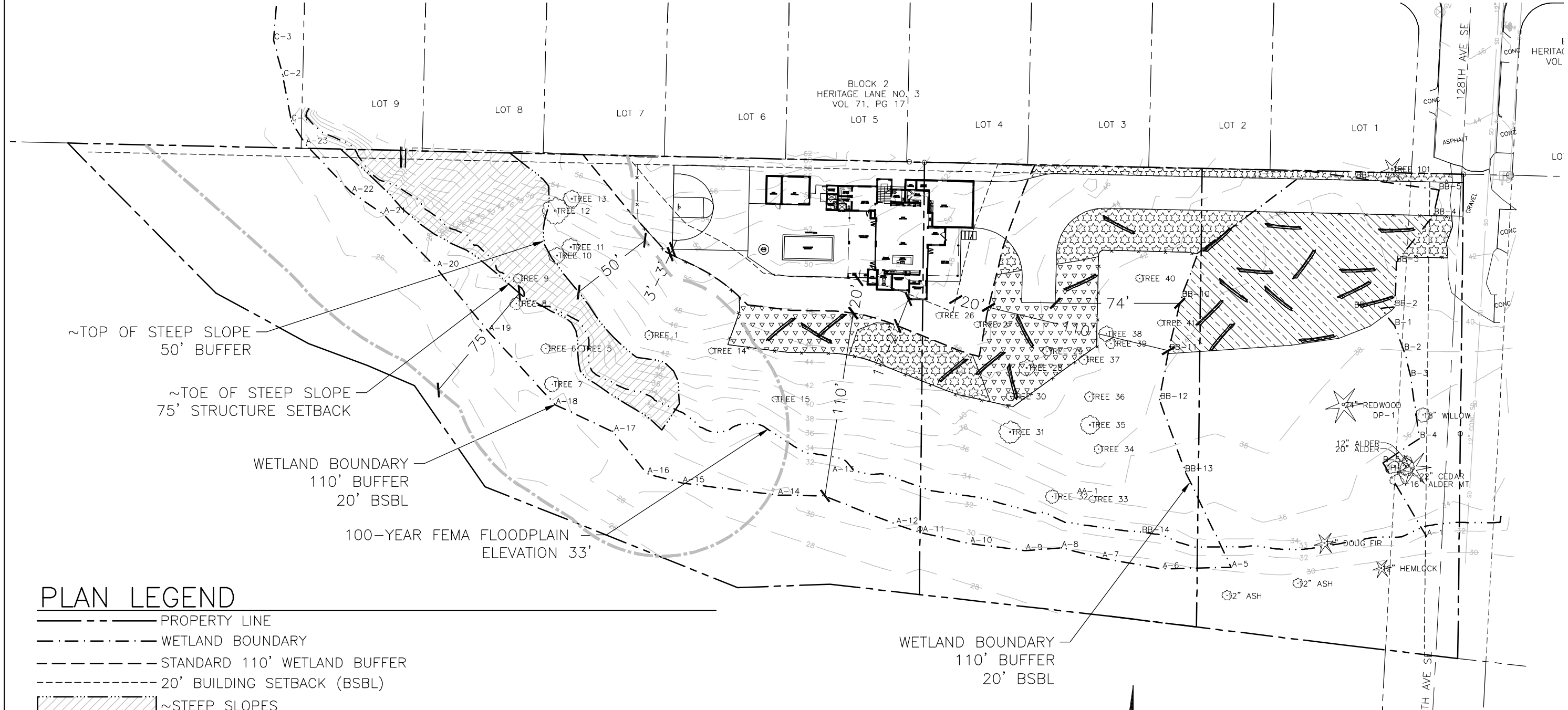
	Impacts (sf)	Planting Enhancement (sf)	Mitigation Ratio*	Total Critical Area (existing)	Modified Critical Area (proposed)
Wetland	1,943 sf 0.04 ac	9,402 sf 0.21 ac	4.8:1	76,010 sf 1.74 ac	74,067 sf 1.70 ac
Wetland Buffer	4,888 sf 0.11 ac	12,428 sf 0.29 ac	2.5:1	78,091 sf 1.79 ac	73,203 sf 1.68 ac

*Enhancement to Impact Ratio

On-site Mitigation treatments are described below. Off-site mitigation measures are described in **Section 5.0**.

4.1 Invasive Plant Removal

Armenian blackberry is present throughout most of the eastern two-thirds of on-site buffer areas. In designated enhancement areas, these will be cut down, and the roots grubbed out. All parts of the plants

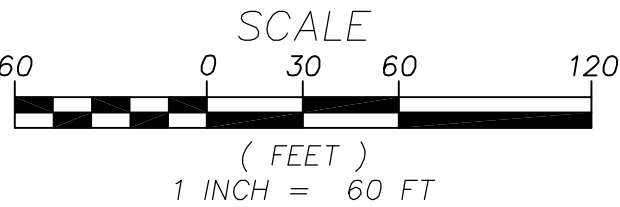


PLAN LEGEND

- PROPERTY LINE
- WETLAND BOUNDARY
- STANDARD 110' WETLAND BUFFER
- 20' BUILDING SETBACK (BSBL)
- ~STEEP SLOPES
- 50' STEEP SLOPE BUFFER (FROM TOP)
- 75' STEEP SLOPE STRUCTURE SETBACK (FROM TOE)
- 100-YEAR FEMA FLOODPLAIN
- CONSTRUCTION FENCING AND EROSION CONTROL
- LARGE WOODY DEBRIS

MITIGATION LEGEND

- WETLAND ENHANCEMENT – 9,402 SF (0.21 ACRES)
- BUFFER ENHANCEMENT WITH BLACKBERRY REMOVAL AND PLANTING WITH TREES, SHRUBS AND GROUNDCOVER – 6,361 SF (0.15 ACRES)
- BUFFER ENHANCEMENT WITH BLACKBERRY REMOVAL AND PLANTING WITH SHRUBS IN AREA OF EXISTING NATIVE FERNS AND TREES – 6,067 SF (0.14 ACRES)
- TOTAL MITIGATION – 21,830 SF (0.50 ACRES)



NOTES

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<div><div>AQUATICA</div><div>ENVIRONMENTAL CONSULTING, LLC</div><div>P.O. BOX 308 DUVALL, WA 98019</div><div>T 425.802.8988</div></div>	<div>PROPOSED MITIGATION OLTEANU PROPERTY 807 128TH AVE. SE BELLEVUE, WASHINGTON PARCELS 0424059110, -9111, -9112</div>	DRAWN BY KG	CHECKED BY TO
		SCALE AS NOTED	DATE 10.20.21
		PROJECT NO. 21-368	
		FIGURE 6 OF 9	

shall be removed and disposed of off-site. Areas that have no desirable groundcover species shall be covered in cardboard after invasive plant removal and sheet mulched with 4 inches of coarse wood chips such as arborist chips. In areas with desirable groundcovers present (primarily sword ferns) these species shall be preserved, and the area mulched with wood chips. Cardboard sheet mulching shall not be used in areas with existing ferns. These treatment areas are shown on **Figure 6**.

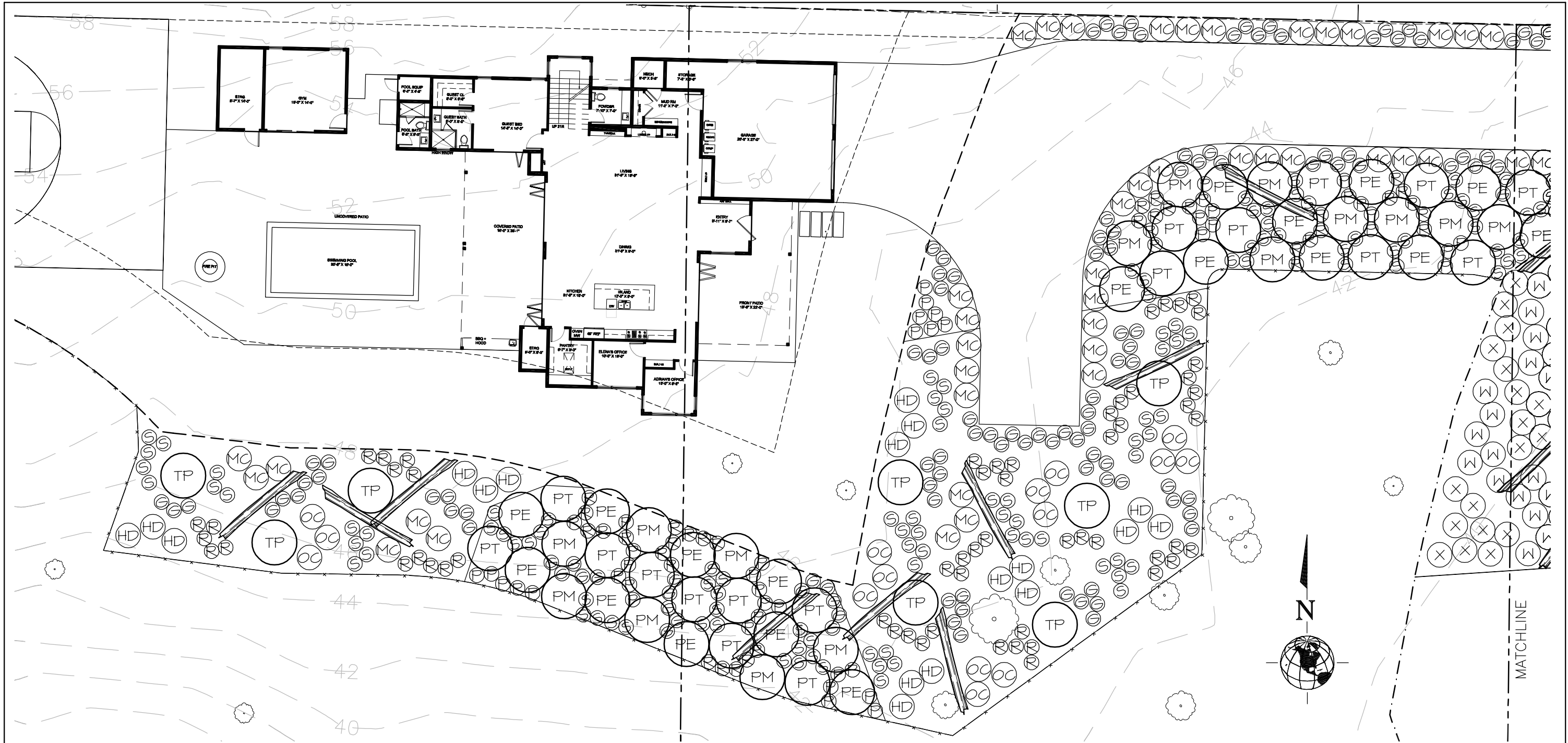
4.2 Planting Enhancement

The plant species depicted on the mitigation plan (**Figures 7 and 8**) were chosen for a variety of qualities, including adaptation to specific water regimes, value to wildlife, value as a physical or visual barrier, pattern of growth (structural diversity), ability to provide erosion control, and aesthetic values. Plant materials may consist of a combination of bare-root shrubs (during the dormant season) and container plants. Plants shall not be installed during the dry summer months (generally July through September).

Evergreens such as salal and Pacific wax myrtle are proposed to be planted in the buffer areas along the parking and driveway to screen lights and human activity from the driveway and area surrounding the house. These species are also drought tolerant and grow well in buffer environments. Bitter cherry, osoberry, thimbleberry (*Rubus parviflorus*), and snowberry provide food for wildlife through fruit production. Many of these species, especially snowberry and sword fern develop dense, fibrous root systems that are excellent at providing erosion control.

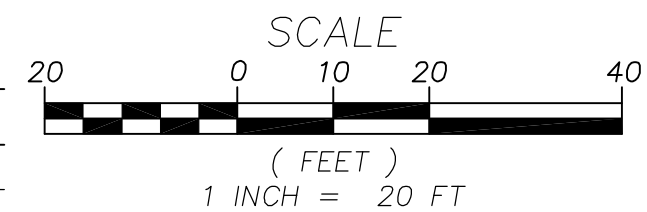
In the wetland, species adapted to a high-water table are proposed, including Sitka spruce and two species of willow, Sitka willow and Pacific willow (*Salix lasiandra*). Sitka spruce is evergreen and will provide screening adjacent to the driveway. The two species of willow will provide for the development of both a shrub (Sitka) and tree (Pacific) layer in the wetland. The on-site portion of the wetland is presently dominated by reed canarygrass, which is an invasive species. This mitigation project is not proposing complete removal, but rather is proposing planting with a fast growing and aggressive native species (willows) with the goal of establishing a shrub and tree layer in the wetland to increase the structural and biological diversity of the wetland and reduce reed canarygrass cover over time. Complete removal is not proposed for two primary reasons. First, reed canarygrass is known for providing excellent erosion control through its dense root system. The proximity of this wetland to Kelsey Creek makes this an important function. Willows will also provide this erosion control function, but the change can be done gradually without a period where there is no vegetation in an aquatic environment. Willows have been shown as an effective long-term strategy to reduce reed canarygrass coverage (Kim et. al. 2006). The second reason is that removal of this species brings about additional environmental impacts that do not outweigh the benefit of complete removal. It is very difficult to remove this plant without the use of extensive herbicides and with the proximity to Kelsey Creek and numerous salmonid species this risk is not worth the potential harm, either the known or suspected impacts that herbicides can have on aquatic environments. Reed canary grass can also be removed through altering the hydrologic regime through creating a wetter system that the grass cannot tolerate. This is not a possibility on this site due to the seasonal and marginal hydrology of this area and lack of any other water source.

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PLANT LIST (SEE FIGURE 6 FOR SCHEDULE)

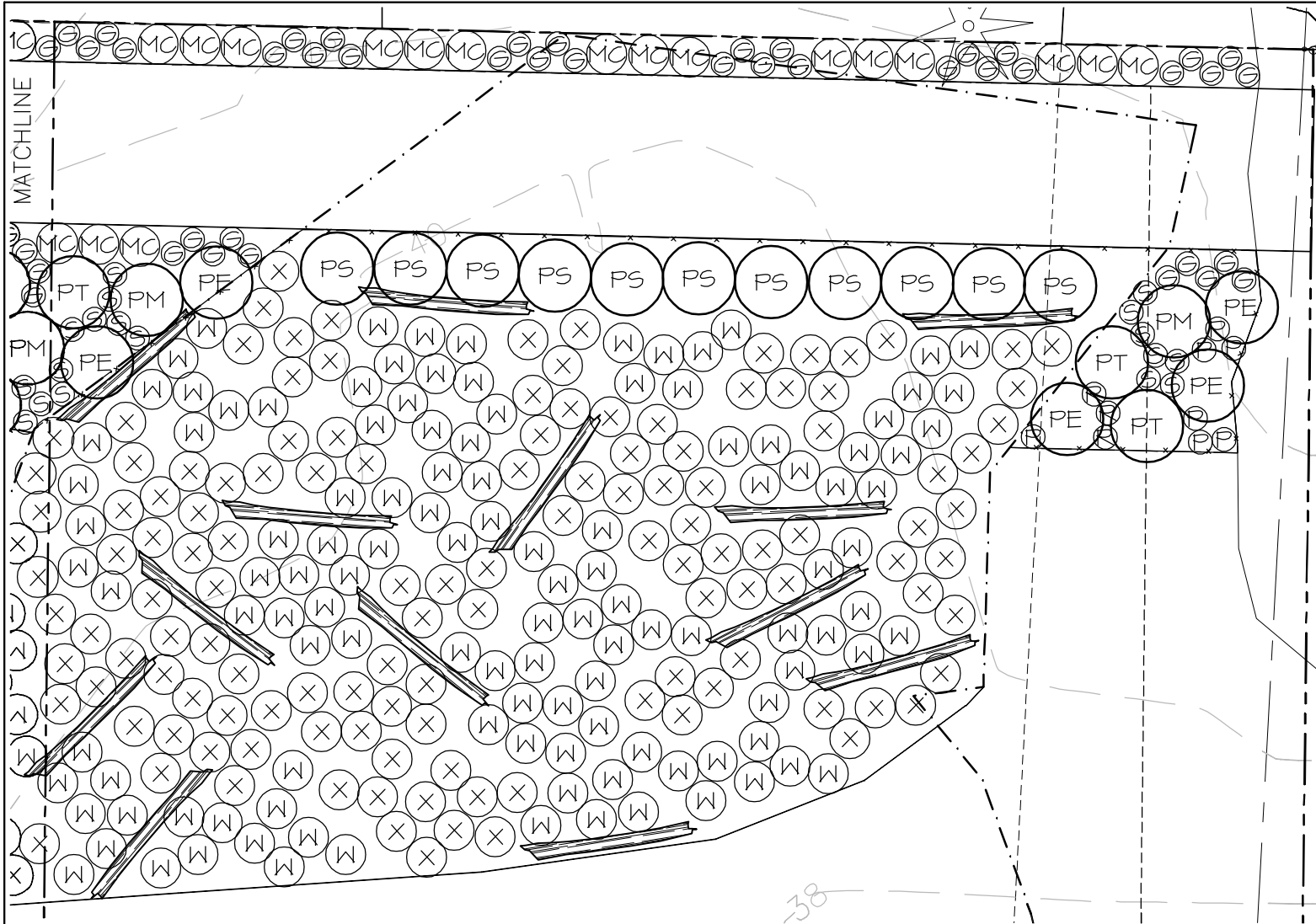
TREES		SHRUBS		GROUNDCOVER	
KEY	COMMON NAME	KEY	COMMON NAME	KEY	COMMON NAME
PS	SITKA SPRUCE	HD	OCEAN SPRAY	G	SALAL
PT	QUAKING ASPEN	MC	PACIFIC WAX MYRTLE	P	SWORD FERN
PE	BITTERCHERRY	OC	INDIAN PLUM		
PM	DOUGLAS FIR	R	THIMBLEBERRY		
W	PACIFIC WILLOW	X	SITKA WILLOW		
TP	WESTERN RED CEDAR	S	SNOWBERRY		



NOTES

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AQUATICA ENVIRONMENTAL CONSULTING, LLC P.O. BOX 308 DUVALL, WA 98019 T 425.802.8988	PLANTING PLAN OLTEANU PROPERTY 807 128TH AVE. SE BELLEVUE, WASHINGTON PARCELS 0424059110, -9111, -9112	DRAWN BY KG	CHECKED BY TO
		SCALE AS NOTED	DATE 10.20.21
		PROJECT NO. 21-368	
		FIGURE 7 OF 9	



PLANT SCHEDULE

TREES

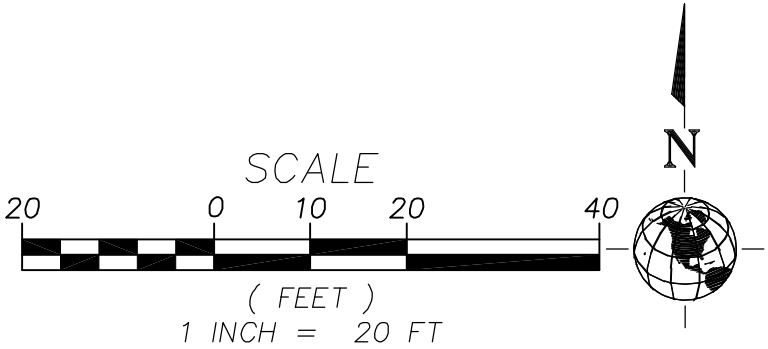
KEY	SCIENTIFIC NAME	COMMON NAME	SIZE (MIN.)	SPACING	QUANTITY
PS	PICEA SITCHENSIS	SITKA SPRUCE	5 GAL.	AS SHOWN	11
PT	POPULUS TREMULOIDES	QUAKING ASPEN	2 GAL.	AS SHOWN	19
PE	PRUNUS EMARGINATA	BITTERCHERRY	2 GAL.	AS SHOWN	22
PM	PSEUDOTSUGA MENZIESII	DOUGLAS FIR	2 GAL.	AS SHOWN	17
W	SALIX LASIANDRA	PACIFIC WILLOW	2 GAL.	5' O.C.	127
TP	THUJA PLICATA	WESTERN RED CEDAR	5 GAL.	AS SHOWN	8

SHRUBS

KEY	SCIENTIFIC NAME	COMMON NAME	SIZE (MIN.)	SPACING	QUANTITY
HD	HOLODISCUS DISCOLOR	OCEAN SPRAY	1 GAL.	5' O.C.	18
MC	MYRICA CALIFORNICA	PACIFIC WAX MYRTLE	1 GAL.	5' O.C.	58
OC	OEMLERIA CERASIFORMIS	INDIAN PLUM	1 GAL.	5' O.C.	15
R	RUBUS PARVIFLORUS	THIMBLEBERRY	1 GAL.	3' O.C.	96
X	SALIX SITCHENSIS	SITKA WILLOW	2 GAL.	5' O.C.	136
S	SYMPHORICARPOS ALBUS	SNOWBERRY	1 GAL.	3' O.C.	122

GROUNDCOVER

KEY	SCIENTIFIC NAME	COMMON NAME	SIZE (MIN.)	SPACING	QUANTITY
G	GAULTHERIA SHALLON	SALAL	1 GAL.	3' O.C.	159
P	POLYSTICHUM MUNITUM	SWORD FERN	1 GAL.	3' O.C.	54



NOTES

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		SCALE AS NOTED	DATE 10.20.21
		PROJECT NO. 21-368	
		FIGURE 8 OF 9	

SPECIFICATIONS

CONSTRUCTION/SPECIFICATIONS

- Prior to construction, the limits of work will be clearly staked at 20-foot intervals and all temporary erosion and sedimentation controls in place.
- Hazard trees proposed to be removed in the buffers shall be transformed into snags at a height less than their distance to new infrastructure to prevent future hazards. Removed trees on-site shall be preserved as needed to provide large woody debris as noted in the buffer.
- Sheet mulch all buffer areas to be planted. Do not sheet mulch native ferns. Do not sheet mulch wetland areas. Mulch shall be a minimum of 4" of coarse wood chips such as arborist chips.
- Species substitution shall not be made without approval of wetland biologist.
- Plants shall be locally grown (western Washington or Oregon), of normal health, vigorous, and free of weeds, diseases, insects, insect eggs and larvae.
- Container grown plants shall not be loose in container and shall not be pot-bound.
- B&B plant material shall not have cracked or mushroomed root balls. Root balls shall be firm, natural balls of earth of sufficient size to encompass the fibrous and feeding rooting system necessary for establishment and health of plant.
- Do not prune plants prior to delivery or planting.
- Take all precautions and customary good trade practices in preparing plants for transport. Cover plants transported on open vehicles with a protective covering to prevent wind burn.
- Protect plants from drying out. Bare root and B&B plant material shall have their roots kept moist at all times. Protect from freezing, wind, and sun. If planting is delayed by more than 24 hours, cover roots/root balls with sawdust, compost, or soil. Water plants as necessary.
- Water plants within 24 hours of planting.
- All receipts for labor and materials shall be retained for submittal to the County if requested.
- The bond holder shall replace any plants that die within the first year following approval of installation.

SHRUB AND TREE SOURCES

STORM LAKE GROWERS
MONROE, WA
(360) 794-4842

TADPOLE HAVEN NATIVE PLANTS
WOODINVILLE, WA
(425) 788-6100

OXBOW FARMS
CARNATION, WA
(425) 788-1134
EXT. 4

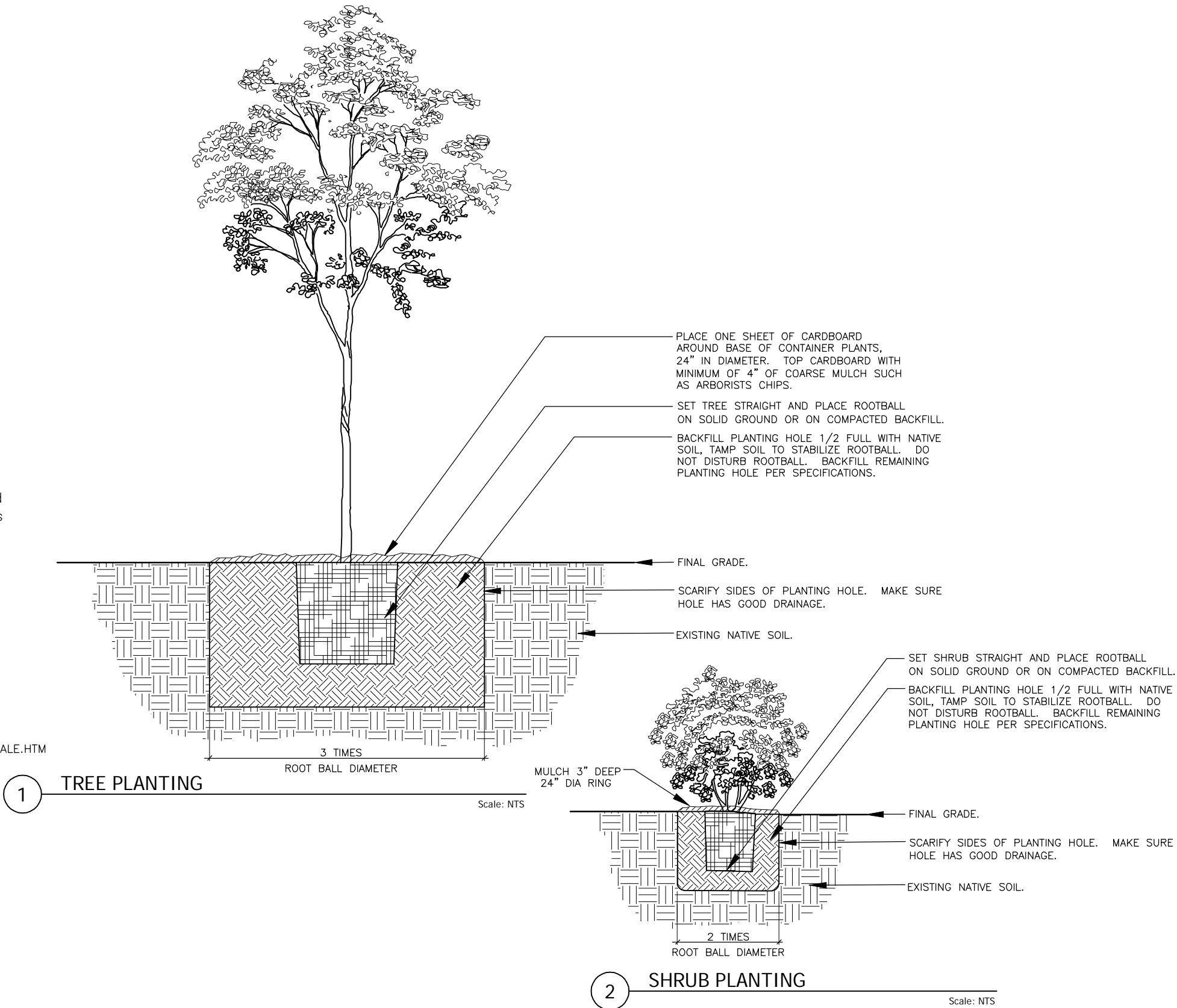
KING COUNTY CONSERVATION DISTRICT
[HTTP://KINGCD.ORG/PROGRAMS-NATIVE-WALK-UP-SALE.HTM](http://kingcd.org/programs-native-walk-up-sale.htm)

SEED SOURCES:

PLANTAS NATIVA
BELLINGHAM, WA
(360) 715-9655

INSIDE PASSAGE SEEDS
PORT TOWNSEND, WA
(360) 385-6114

FROSTY HOLLOW ECOLOGICAL RESTORATION
LANGLY, WA
(360) 579-2332



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		SCALE AS NOTED	DATE 10.20.21
		PROJECT NO. 21-368	
		FIGURE 9 OF 9	
DETAILS AND SPECIFICATIONS OLTEANU PROPERTY 807 128TH AVE. SE BELLEVUE, WASHINGTON PARCELS 0424059110, -9111, -9112			

4.3 Habitat Features

Large woody debris salvaged from the upland portions of the property are proposed to be placed to be placed in the restored portions of the buffer. This will provide habitat for amphibians and small mammals to shelter beneath and will also aid in improving soil quality long term as they decay.

4.4 Irrigation

The installed plantings must be watered if needed for at least the first year after planting and shall remain in place during the monitoring period. While native plants are drought tolerant, supplemental water is often needed for the first year to ensure adequate plant establishment. Plants should receive 1" of water once per week – either through irrigation, natural rainfall, or a combination of both. Irrigation must be continued during subsequent years of the monitoring period if 1) the plants appear stressed from drought, 2) the summer is unusually hot and dry, or 3) a significant number of plants die and require replacing. The plants may be watered by hand due to the proximity to the proposed home or a temporary irrigation system may be installed. Both the wetland and upland areas shall be irrigated as needed due to the seasonal nature of wetland hydrology in this part of the wetland.

4.5 Goal, Objectives, and Performance Standards

The following goal, objectives, and performance standards have been created to evaluate the success of the project.

Goal 1:

Mitigate for buffer impacts by restoring the buffer areas shown on **Figure 6**. The project will be evaluated through the following objectives and performance standards.

Objective A: Increase and restore the woody species diversity in the buffer area to improve the structural and biologic diversity and overall habitat value of the buffer.

Performance Standard A: *All plants that die by the end of Year 1 will be replaced. Percent survival of planted woody species must be at least 85% for remaining years of the monitoring period.*

Objective B: Increase and replace cover of native groundcovers shrubs and trees.

Performance Standard B: *Coverage of planted or volunteer desirable species must be at least 70% areal coverage by the end of the 5-year monitoring period in areas without an existing woody canopy. Success in areas with an existing tree canopy will be determined through Objective A alone.*

Objective C: Remove and control invasive plant species with the goal of reducing invasive cover to less than 10% in the enhanced buffer areas.

Performance Standard C: *After construction and following every monitoring event for a period of five years, exotic and invasive plant species will be maintained at levels below 10% total cover in the mitigation area. Species requiring control include those on the King County Noxious Weed List.*

Goal 2:

Provide on-site wetland mitigation by enhancing the degraded wetland areas shown on **Figure 6**. The project will be evaluated through the following objectives and performance standards.

Objective D: Establish a scrub shrub layer of native shrub and tree species in the enhanced wetland.

***Performance Standard D:** Coverage of planted or volunteer desirable species must be at least 80% areal coverage by the end of the 5-year monitoring period. Note: Tree species may not form an actual tree layer (over 3 meters) within the monitoring period, although all planted species must be represented in the scrub shrub layer.*

Objective E: Reduce reed canarygrass coverage in the enhanced wetland.

***Performance Standard E:** Following every monitoring event for years three through five, the site shall demonstrate a reduction of reed canarygrass coverage, as noted through visual inspection, compared to conditions following construction. In these areas, success will be determined based on reduced cover of reed canarygrass but not elimination.*

5.0 OFF-SITE MITIGATION and BANK USE PLAN

The City of Bellevue LUC does not specifically address the use of wetland mitigation banks and fee in lieu sites although includes a preference for mitigation to first restore wetlands on formerly upland sites and in the same drainage sub-basin, when possible. Within the urbanized Puget Sound region, high quality opportunities for off-site mitigation are difficult to find, as is the scenario for this project. In addition to providing available on-site wetland enhancement, the project is proposing to use the Keller Farm Mitigation Bank (KFMB), to mitigate for project wetland impacts. Wetland regulation and science has been evolving since wetlands were first regulated and City codes created to address their protection. Federal and State agencies including the Washington State DOE and the USACE now prefers the use of mitigation banks when available and requires their use whenever possible. This shift has occurred as the benefits of mitigation banks has become obvious and is supported by the best available science. These sites provide a guaranteed successful mitigation, as they are not approved for use and cannot sell credits until they have been created and shown to be successful. The KFMB is sited in a high value location and will be able to replace wetland acreage loss better than an on-site mitigation proposal. The following sections discuss KFMB Goals and Objectives, the City code requirements for mitigation, and information on bank credits, purchase and timing.

5.1 KFMB Goals and Objectives

The KFMB is located at the confluence of two regionally significant, salmon-bearing streams, Bear Creek and Evans Creek. Another smaller stream, Perrigo Creek, flows adjacent to a portion of the western Bank boundary and was rerouted and daylighted onto the bank site. The Bank design goals were developed as part of the Project Prospectus (Habitat Bank, 2015) and Basis of Design Report (Shannon and Wilson, Inc., 2018). The design goals are consistent with DOE, USACE, and U.S. Environmental Protection agency guidelines for establishing mitigation bank goals and criteria, as well as with Bear Creek Basin restoration planning efforts and WRIA-8 restoration goals as established by the WRIA-8 Salmon Recovery Council. The project site where impacts are occurring is in the WRIA-8 watershed. Wetland and habitat restoration goals on the Bank site were developed to address the limiting factors in the watershed related to the loss of wetland hydrology, the loss of wetland habitat and vegetation communities, and the alteration of topography affecting wetlands, floodplain, and stream habitat conditions. Implementation of the KFMB will result in substantial gains in aquatic ecosystem functions as compared to baseline conditions present on the site.

The site-specific goals and objectives for the KFMB include:

- Permanently protect ecosystem functions at the Bank by implementing the Bank Instrument and executing a conservation easement with permanent funding for site stewardship.
- Re-establish wetland hydrology and varying wetland hydroperiods across the site by disabling farm ditches, reconnecting Bear creek with its floodplain, and performing grading actions to re-establish wetland hydrology and riparian habitat across the Bank site.
- Create additional wetland habitat areas that support wetland-dependent organisms and anadromous fish species. Increase habitat structure and diversity on the Bank site over existing degraded conditions.
- Re-establish wetland vegetation and native plant communities across the site. Remove and control noxious and invasive plant species and reintroduce native vegetation to increase habitat complexity in the floodplain wetlands and adjacent upland areas. Plant native trees, shrubs, and herbaceous species to re-establish a mosaic of habitat communities within the Bank property.
- Improve access for aquatic organisms to floodplain wetland and aquatic areas. Enhance and create off-channel rearing and refuge habitat for salmonids within the floodplain streams and deeper backwater areas connected to Bear Creek.
- Reconnect Bear Creek to the floodplain and improve floodplain functions on the Bank site including attenuation of flood flows, reductions in peak flood flows, food web and organic material support and transport, and refuge habitat for fish and wildlife during flood events.
- Establish a connection point for the future relocation of Perrigo Creek through the adjacent parcel north of the Bank.
- Reestablish and rehabilitate stream channel habitat in the floodplain through grading and addition of large woody debris (LWD). Create pool habitat and increase channel habitat complexity.
- Increase shading and cover of streams through planting on the Bank site over existing conditions.

5.2 City Code Requirements

The following code sections are required to be met, and how the project intends to meet these code sections while proposing use of the KFMB is detailed below. The code section is in regular type, and explanation of how the project meets these requirements in italics.

LUC 20.25H.105(A)

A. Preference of Mitigation Actions.

1. Mitigation for Impacted Wetland Critical Area. Mitigation actions that require compensation of impacted wetland critical area shall occur in the following order of preference, subject to the location requirements of subsection B of this section:

- a. Restoring wetlands on upland sites that were formerly wetlands.
- b. Creating wetlands on disturbed upland sites such as those with vegetative cover consisting primarily of nonnative introduced species. This should only be attempted when there is a consistent source of hydrology and it can be shown that the surface and subsurface hydrologic regime is conducive for the wetland community that is being designed.

c. Enhancing significantly degraded wetlands.

The proposed use of the KFMB meets the preferred option (a) of restoring wetlands on upland sites that were formerly wetlands. The majority of mitigation at the bank involved restoring wetlands on upland sites that were formerly wetland. This was done through reestablishing connection of the stream and tributaries to allow overbank flooding in what was a farmed parcel that had been ditched and drained. The bank involved rehabilitating 7.9 acres of wetlands and re-establishing approximately 51.1 acres of wetlands. Prior to creation the bank land had 7,114 linear feet (1.7 acres) of ditched tributary streams. These were rehabilitated and approximately 5,162 linear feet (2.6 acres) of stream channel added (KFMB MBI, Appendix -B (B.7-Summary)).

LUC 20.25H.105(B)

B. Type and Location of Mitigation for Wetland Critical Area.

Compensatory mitigation for critical areas functions and values shall be either in-kind and on-site, or in kind and within the same drainage sub-basin. Mitigation actions may be conducted off-site and outside of the drainage sub-basin when all of the following are demonstrated through a critical areas report:

1. There are no reasonable on-site or in-sub-drainage basin opportunities or on-site and in-sub-drainage basin opportunities do not have a high likelihood of success, after a determination of the natural capacity of the site to mitigate for the impacts. Consideration should include anticipated wetland mitigation replacement ratios, buffer conditions and proposed widths, hydrogeomorphic classes of on-site wetlands when restored, proposed flood storage capacity, and potential to mitigate stream fish and wildlife impacts (such as connectivity);

There are no reasonable on-site options to fully mitigate impacts due to the extensive wetlands and buffers on-site. On-site options for wetland mitigation are limited to wetland enhancement. There is insufficient upland area to convert to wetland while providing adequate buffers, and no areas that could be restored to former wetland conditions. In consideration of enhancement, there is insufficient area to meet state requirements for wetland mitigation through enhancement. Even if there were sufficient acreage for wetland enhancement, it would not result in a no-net-loss of wetland acreage. There are also no known readily available off-site mitigation options in the same subbasin that would have the same likelihood of success as utilizing the KFMB. A discussion of the research and findings into the likelihood of mitigation success is elaborated on under item (2), below.

In addition to the ability to meet mitigation replacement ratios that cannot be met on-site, the KFMB meets the other required considerations, including buffer conditions and proposed widths, hydrogeomorphic wetland classes, and proposed flood storage capacity and fish and wildlife impacts such as connectivity. The KFMB is protected by non-creditable buffers to protect the wetlands and streams. It also has a similar hydrogeomorphic class as Wetland A, as they are both wetlands associated with a stream with adjacent shallow depressions that detain water during flood events. The restoration of fish habitat is an important component of the KFMB. It is in an exceptionally valuable location, at the confluence of Bear, Perrigo, and Evans Creeks and has restored formerly ditched streams to their floodplains to create off-channel rearing habitat and refugia for juvenile salmon and is restoring native vegetation on what was former farmland to shade and cool waters that contribute to the

WRIA-8 system. These actions have restored wetland hydrology to drained farmland to create flood storage capacity, attenuate flood flows which will be of benefit to the entire watershed.

The KFMB is also adjacent to additional 70 acres of large areas of protected habitat including a City park and mitigation created by the Washington State Department of Transportation to the northeast, which provides additional buffering through connectivity of approximately 145 protected wetlands, streams, and uplands.

2. Off-site mitigation has a greater likelihood of providing equal or improved wetland functions than the impacted wetland; and

As previously described, there are not adequate on-site options, and the KFMB has a greater likelihood of providing equal or improved wetland functions than mitigation on the impacted wetland would provide. A high degree of failure of permittee mitigation has been documented by numerous studies, which also justifies use of off-site mitigation and the KFMB. The City of Bellevue Critical Areas Regulations Technical Report-Part 1 (Bellevue, 2016) addresses the limitations and these studies as part of a best available science review by The Watershed Company, with the key points as follows from this report:

“3.1.4.5 Compensatory Mitigation Alternatives

Compensatory mitigation can occur through permittee-responsible mitigation (on-site or offsite), mitigation banks, or in-lieu fee programs. In recent years, with permittee-responsible mitigation as the typical approach, several studies have concluded that despite regulatory mechanisms to ensure “no net loss” of wetlands, substantial loss has occurred, both in terms of wetland area and wetland functions (Matthews and Endress 2008). Losses through compensatory mitigation have been attributed to poor restoration success and a lag time between impacts and mitigation (Bendor 2009). The increased establishment and use of wetland mitigation banking and in-lieu fee programs has been proposed as a solution to the issues that affect on-site mitigation because 1) regulators can devote more time to monitoring and ensuring the success of mitigation banks, 2) mitigation bank sites are generally situated in an ecologically significant area, and 3) mitigation banks tend to aggregate projects into larger wetlands that may provide more functions than small, isolated wetlands (Bendor and Brozovic 2007, Keddy et al. 2009). The Agencies have stated that, “Mitigation banks provide an opportunity to compensate for impacts at a regional scale and provide larger, better-connected blocks of habitat in advance of impacts” (WDOE et al. 2006). Mitigation banks are also advantageous because mitigation credits generally become available in stages as the wetland permit conditions are met and restoration is successful. This helps minimize the lag time that can create a temporal loss in wetland function (Bendor 2009). Based on this and similar rationale, in 2008, EPA and the U.S. Army Corps of Engineers jointly promulgated regulations revising and clarifying requirements regarding compensatory mitigation, and establishing the following hierarchal preference for implementation of compensatory mitigation:

1 Mitigation banks

2 In-lieu fee programs

3 Permittee-responsible mitigation under a watershed approach

4 Permittee-responsible mitigation through on-site and in-kind mitigation

5 Permittee-responsible mitigation through off-site or out-of-kind mitigation”

The KFMB addresses all of the functions that wetlands provide in a large, re-established wetland whose credits have been approved through a multi-agency review team who will provide long-term oversight to ensure that performance standards are achieved over 10 years of monitoring. The KFMB land is also protected in perpetuity by a conservation easement held and enforced by a third-party land steward and managed in perpetuity through the establishment of an endowment fund for the project. Credits are only released for use to a bank project by the resource agencies, after performance standards are met. Additionally, restoration is done in advance, reducing or eliminating temporal loss. A financial assurance for the bank has also been established to ensure the project is completed successfully through the monitoring period. All of these attributes result in the mitigation bank proposal being the one most likely to provide equal or improved wetland functions than permittee responsible wetland creation or restoration at or near the impacted wetland.

3. Off-site locations shall be in the same sub-drainage basin unless established watershed goals for water quality, flood or conveyance, habitat, or other wetland functions have been established and strongly justify location of mitigation at another site.

*Mitigation at the KFMB meets watershed goals for water quality, flood conveyance, habitat and strongly justifies off-site out of sub-drainage basin mitigation. The KFMB service area includes portions of the City of Bellevue, including the project site, which is in the secondary service area (see service area maps in **Appendix C**). The approval of the bank included the involvement of an interagency team including: USACE, DOE US EPA, Washington State Fish and Wildlife and Muckleshoot Indian Tribe Fisheries Division. Through this team of stakeholders, the service area was developed and the KFMB approved because it was specifically addressed a watershed approach to provide mitigation opportunities at a high value site that would support the rationale for mitigation throughout its service area. Additional details on the site selection and service area rationale are included in the Mitigation Banking Instrument, held by the Department of Ecology. The bank use ratios factor in no net-loss objectives to ensure a positive ecological gain, of both wetland area and functions when the project is utilized.*

The KFMB follows Ecology’s guidance document “Selecting mitigation sites using a watershed approach”. In the Lake Washington-Sammamish Watershed, there are relatively few restoration or mitigation opportunities available that provide meaningful functional lift of existing aquatic resources. There are limited mitigation opportunities when looking “on-site” versus locating mitigation in a more sustainable and effective part of the watershed.

The KFMB site has been identified as a high priority restoration site since the 1990s and was specifically identified as a potential mitigation bank site in the Final Lake Washington/Cedar/Sammamish Watershed (WRIA 8) Chinook Salmon Conservation Plan (2005). The Bank site was identified as a “Near Term Action” important to regional salmonid habitat restoration efforts as part of the Lake Washington/Cedar/Sammamish Salmon Conservation Plan for Water Resource Inventory Area (WRIA) 8, adopted by the National Oceanic and Atmospheric Administration (NOAA) and implemented by local stakeholders to achieve Chinook salmon recovery consistent with the Endangered Species Act (Chinook Salmon Conservation Plan, 2005; ESA 16 U.S.C. S 1531).

Restoration goals at KFMB address the limiting factors in the watershed related to loss of wetland habitat and riparian vegetation communities, and alterations to floodplain and stream habitat.

5.3 Bank Credits

Utilizing credits at the mitigation bank does not follow the traditional mitigation ratios used for permittee responsible mitigation, such as those specified in LUC 20.25H105. These ratios and the KFMB available credits are not comparable units. Project stakeholders and state and federal agencies have calculated how credits shall be applied to different wetland categories. These determinations were made using several considerations including the guarantee of successful wetland rehabilitation at the bank site, as wetlands have already been restored and determined to be successful. This prevents the potential for failed wetland creation, which is one of the reasons for mitigation ratios in excess of impact area. The other consideration in determining the credit ratios is the ecological lift and value that the KFMB will provide. The rationale for the credit ratios is included in KFMB Mitigation Bank Instrument (MBI) (Habitat Bank, LLC 2019). This document defines a credit as:

“a unit of measure representing the increase in the ecological values of different habitat types on the Bank site. A credit for the KFMB represents the increase in functions and values, and areal extent of the wetland systems and riparian areas on the Bank site. This increase in functions results from the re-establishment and rehabilitation of wetlands and streams, and the enhancement of riparian uplands on the Bank site”.

Table 6 below, summarizes the required ratios for bank use. Category I wetlands do not have a required ratio but are determined on a case-by-case basis. This project is proposing a 1.3:1 credit to impact ratio for the impacted wetland on-site. This ratio is slightly higher than required for Category II wetlands, but not substantially higher because of the degraded nature of the impacted wetland and the provision of - on-site wetland enhancement at 4.8:1 enhancement to impact ratio, as detailed in the on-site mitigation section.

Table 6. Required and Proposed KFMB Credits

Permanent Resource Impact	Agency Required Credit to Impact Ratio Impact Ratio (ac.)	Proposed Credit Ratio	Proposed Credits
Wetland, Category I	Case by case	1.3:1	0.057
Wetland, Category II	1.2 to 1	0	0
Wetland, Category III	1.0 to 1	0	0
Wetland, Category IV	0.85 to 1	0	0
Critical Area Buffer	0.3 to 1	0	0
Stream	Case by case	0	0

5.3.1 Confirmation of Mitigation Credit Availability

As of October 20, 2021, the KFMB has approximately 5.0234 mitigation credits available for immediate use (see **Appendix D**). Mitigation credits are provided from the bank to an applicant's project using the

suggested ratios in the table below, as approved by the USACE and the Washington State DOE. For additional information on credit availability and bank use, see contacts in **Table 7**.

Table 7. Bank Contacts

For more information about the bank contact	IRT (Interagency Review Team) Contacts	
	Department of Ecology	Corps of Engineers
<i>Habitat Bank LLC.</i> Zach Woodward Project Manager P.O. Box 354 Kirkland, WA 98033 Phone: (425) 205-0279 Email: Zachary.woodward@habitatbank.com See also: www.habitatbank.com	Kate Thompson Shorelands and Environmental Assistance Program P.O. Box 47600 Olympia, WA 98504 (360) 407-6749 kate.thompson@ecy.wa.gov	Suzanne L. Anderson, PhD, PWS Project Manager/Banking Lead Seattle District U.S. Army Corps of Engineers Regulatory Branch, CENWS-OD-RG Mail Address: P.O. Box 3755 Seattle, WA 98124-3755 Building Location: 4735 East Marginal Way South Seattle, WA 98134 Email: Suzanne.L.Anderson@usace.army.mil

5.3.2 Credit Purchase or Transfer Timing

Adrian and Elana Olteanu will enter into a Purchase Agreement with Keller Farm Mitigation Bank (Habitat Bank, LLC) to purchase **0.057** credits that would appropriately mitigate for the proposed project impacts. The anticipated timing of credit purchase and transfer will follow permit issuance by the agencies with jurisdiction. Purchase of credits will be completed prior to the onset of any activities affecting impacted resources. Nothing in the Purchase Agreement shall be interpreted as permitting or construed to permit any activity that otherwise requires a federal, state and/or local permit. Proof of the credit purchase and transfer will be provided in the form a notification letter to the approving agencies and to the IRT co-chairs by the Bank Sponsor. Upon service of this notification, the mitigation requirement to purchase **0.057** mitigation credits will be fully satisfied.

5.4 Functions not Mitigated at the Bank

As detailed in Section 4, buffers are proposed to be enhanced on-site. The project is impact a small part of a large wetland, and proposing permanent buffer impacts and a home on the edge of the wetland buffer. On-site enhancement is also proposed to mitigate for the buffer's ability to bind soil, slow the flow of water towards Wetland A, and provide screening of the development while increasing the habitat value of the wetlands. These actions cannot be mitigated for solely off-site and are the reason for on-site enhancement treatments.

6.0 FUNCTIONAL VALUE ANALYSIS

Wetlands were rated utilizing the Washington State Department of Ecology Wetland Rating System for Western Washington (2014) and all forms were included in The Watershed Company Wetland Delineation Report. This rating system assigns a point value to a variety of wetland characteristics and the surrounding landscape; through these scores, wetlands are placed into one of four categories, with Category I being the highest functioning wetlands and Category IV the lowest value wetlands. The rating system evaluates three main categories of wetland function: water quality improvement, hydrologic support, and habitat. For each of these categories the potential of the site to perform the

function is evaluated, as well as the landscape potential and the perceived value to society. Wetland A's functions are described below and rating scores were previously summarized in Table 1.

6.1 Water Quality Improvement Function

Site Potential

The wetland was categorized as having an intermittently flowing outlet, which results in water being detained in the wetland during most hydrologic events. The longer water remains in a wetland, the greater the potential for water quality improvement through nutrient and metal uptake by vegetation, adsorption by wetland soils, and filtration. The wetland is nearly entirely vegetated with either an emergent, scrub-shrub, or forested vegetation class, which enables nutrient uptake and filtration by vegetation. Much of the wetland is also seasonally ponded; wetlands with a seasonal ponding cycle best remove the forms of nitrogen that cause eutrophication. Through evaluating these characteristics of the wetland, the wetland had a high score for the potential of the site to perform the water quality improvement function.

Landscape Potential

The landscape site potential for the site to perform water quality improvement functions scored moderate, due to the input of stormwater from developed surfaces into the wetland and from the presence of a pollutant generating adjacent land use, including roadways, subdivisions, and other development.

Value to Society

The site scored high for the water quality improvement value to society because the wetland is in a sub-basin with an aquatic resource on the 303d list and the wetland discharges directly to a stream on the 303d list.

Project Impacts and On-Site Enhancement

The project will result in the loss of some vegetated buffer and wetland areas that perform water quality functions. These impacts will be offset by dense planting of native plants and removal of shallowly rooted invasive species (Armenian blackberry), at a ratio of 2.5:1 (enhancement to loss) in the buffer and at a 4.8:1 enhancement to loss ratio in the wetland. Replacement by native species with dense, fibrous root systems throughout the wetland and buffer areas will enable these to better perform water quality functions through the binding of soil to prevent erosion and increase nutrient uptake.

Off-Site Mitigation - KFMB Contribution to Water Quality

All pre-existing wetlands at the KFMB provided a medium level of water quality functions (total water quality score of 6-7 points) and a low or medium site potential function for water quality improvement using the Washington State Wetland Rating System for Western Washington (Rating System). All wetlands are located within the floodplain of Bear Creek and are inundated during overbank flood events. However, lack of surface channel connections with Bear Creek or existing onsite ditches and limited extent of seasonal ponding during non-flood events restricted the site potential of existing wetlands to provide water quality functions. In addition, because the site was in agricultural use, pollutant filtering capability of vegetation in site wetlands was limited. All existing wetlands now rate high for providing water quality improvement that is valuable to society because both Bear Creek adjacent to the Bank and the tributary Perrigo Creek that flows through the Bank site are listed on the State of Washington 303d list as impaired for water quality parameters. Perrigo Creek is impaired for

temperature and a Total Maximum Daily Load (TMDL) has been established. Bear Creek is listed for bioassessment, dissolved oxygen, temperature, and bacteria and TMDLs have been established for the latter three parameters. Through the rehabilitation and enhancement actions of the KFMB, wetlands on the Bank site are expected to be providing a functional lift in water quality compared to preconstruction conditions. In addition, the bank has created a net increase of 51.1 acres of wetland and 2.6 acres of stream channel/wetland complex. Post-construction wetland and floodplain functions related to water quality, such as removing sediments, nutrients, metals, and toxic organics will continue to significantly increase as native vegetation establishes.

The Bank's riparian restoration and stream plantings are an integral part of a regional effort to restore riparian conditions and functions and reduce temperatures in Bear Creek and the Sammamish River, which has benefits to downstream waters in the watershed, including receiving waters in Lake Washington. Implementation of the bank included vegetating the banks of Bear Creek and the tributary floodplain streams within the Bank site with trees and shrubs will provide additional shading during the critical months in the summer and fall when adult salmon are migrating and spawning. The Bank was designed so that during the summer and fall periods when water levels across the Bank site will be at their lowest levels, water will be confined to the riparian stream channel areas, rather than spreading out or ponding across the site which could warm surface waters. Riparian wetlands are not expected to have extended periods of standing water June through October. Additionally, floodplain streams will maintain their groundwater connection, providing a cold-water source for adjacent and downstream waters.

6.2 Hydrologic Function

Site Potential

The site potential for providing hydrologic functions is moderate in value due to the intermittently flowing outlet, which lifts functional value by providing water detainment during most hydrologic events, and due to the depth of ponding of several feet in the deepest parts of the wetland. The contributing basin of the wetland is large, as the site is low in the watershed, which limits the potential of the site somewhat due to the ratio of the overall wetland size compared to the size of the contributing basin.

Landscape Potential

The landscape potential of the site to provide hydrologic functions is high. The wetland has the opportunity to detain water from stormwater runoff that enters the wetland, there are areas of land that generate excess runoff within 150 feet of the wetland, and more than a quarter of the contributing basin is covered with intensive human land use.

Value to Society

The hydrologic functions of Wetland A scored high for its value to society, as there are both fish resources in Kelsey Creek and human infrastructure such as roads and houses adjacent to the stream. Wetlands that can help detain flows provide value to society.

Project Impacts and On-Site Enhancement

The majority of Wetland A is located within the floodway and floodplains of Kelsey Creek, and at times is inundated with up to two feet of ponded water, which contributes to the wetlands high and moderate hydrologic function scores. However, it is important to distinguish that the location of Wetland A where

fill is proposed is much lower in value. This area is outside of the floodway and floodplain and has minimal surface water ponding, even during the wet times of the year. Project impacts on this function, while they are not non-existent, are minimal. The creation of forested vegetation classes that are densely vegetated in areas that are currently dominated by shrubs or emergent vegetation will provide some benefit to slowing the flow of water through the site. The project stormwater requirements will also be implemented to minimize and slow the flow of water from impervious surfaces on-site.

Off-Site Mitigation - KFMB Contribution to Hydrologic Functions

All pre-existing wetlands on the Bank site provided a medium level of hydrologic functions (total hydrologic score of 7 points) using the Rating System. Restoration actions at KFMB have created a net increase of 51.1 acres of wetland and 2.6 acres of stream channel/wetland complex. This large area of new wetland and stream channels will result in improvement to wetland and floodplain hydrologic functions and watershed-scale hydrologic processes, including increased available flood storage volume, attenuation of flood flows, reductions in peak flood flows, and groundwater recharge.

6.3 Wildlife Habitat Functions

Site Potential

The site has patches of emergent, scrub shrub and forested vegetation layers, per the Cowardin classification. The forested areas include three layers of predominantly native vegetation, which provides both habitat structure and species diversity. The presence of three water regimes, including a stream combined with the vegetation classes increases the interspersed of habitats, which adds to the value of the wetland, as does several habitat features. As a result of these characteristics the site scored high for the habitat site potential.

Landscape Potential

The landscape potential for the site scored in the low range. Potential is limited by the presence of human disturbances in the immediate vicinity of the wetland, as well as within a kilometer of the site, which includes a heavily developed urban and suburban area.

Value to Society

The site also scored high for habitat value to society due to the presence of Washington Department of Fish and Wildlife priority habitats and fish species in Kelsey Creek. The adjacent off-site wetlands are also associated with a public park and have significant value due to their public access and education potential.

Project Impacts and On-Site Enhancement

Project impacts to habitat are occurring in weedy, disturbed areas and adjacent to an existing disturbance and human presence (a subdivision). These impacts will be mitigated through on-site enhancement treatments which are designed to reduce the invasive species cover and replace with native species that will provide habitat for native species as well as provide screening of the wetland from development. Without enhancement, this function would not be expected to improve, as weeds would continue to dominate much of the buffer.

Off-Site Mitigation - KFMB Contribution to Habitat Functions

All pre-existing wetlands on the Bank site provided a medium level of habitat functions (total habitat score of 6 points) using the Rating System. Plant communities previously were entirely emergent and

dominated by non-native and invasive species, farmed, and lacking in habitat complexity. Overall habitat suitability for wetland-associated birds, mammals, amphibians, fish and invertebrates has improved substantially over previous conditions because of: the net increase in acreage of wetland and aquatic area; improved access for aquatic organisms to floodplain wetland and aquatic areas; the increased variety of hydroperiods; the increase in vegetation species richness, habitat diversity and interspersed, and structural diversity; the addition of habitat enhancement features such as large woody debris; and accessibility to contiguous habitat areas such as the adjacent WSDOT mitigation site and NPGA areas along Bear Creek. The restoration of 7,114 linear feet of ditched tributary streams and addition of 5,162 linear feet of stream channel will increase available suitable habitat for salmonids and other fish species, including ESA-listed species, including additional off-channel rearing and refuge habitat within the floodplain streams and deeper backwater areas connected to Bear Creek.

7.0 CONSTRUCTION SPECIFICATIONS

- Prior to weed removal or planting activities, erosion control measures must be installed near the outer edge of the mitigation areas using compost socks or straw wattles.
- Prior to planting, remove Armenian blackberry, and other noxious weeds (per King County Noxious Weed List) in areas to be planted.
- Exact planting locations subject to modification by Biologist during installation.
- Species substitution shall not be made without approval of biologist.
- Plants shall be locally grown (western Washington or Oregon), of normal health, vigorous, and free of weeds, diseases, insects, insect eggs and larvae.
- Container grown plants shall not be loose in container and shall not be pot-bound.
- B&B plant material shall not have cracked or mushrooted root balls. Root balls shall be firm, natural balls of earth of enough size to encompass the fibrous and feeding rooting system necessary for establishment and health of plant.
- Do not prune plants prior to delivery or planting.
- Take all precautions and customary good trade practices in preparing plants for transport. Cover plants transported on open vehicles with a protective covering to prevent wind burn.
- Protect plants from drying out. Bare root plant material shall always have their roots kept moist. Protect from freezing, wind, and sun. If planting is delayed, cover roots/root balls with moist sawdust, compost, or soil. Water plants as necessary.
- Thoroughly water plants within 24 hours of planting.
- All receipts for labor and materials shall be retained for submittal to the City if requested.
- Replace dead or dying plant material during or at conclusion of 1-year post-installation approval.

8.0 MONITORING PROGRAM

Performance monitoring of the mitigation areas will be conducted for a period of five years, with reports submitted to the City according to the schedule presented in **Table 8**.

Table 8: Projected Calendar for Performance Monitoring and Maintenance Events

Year	Date	Maintenance Review	Performance Monitoring	Report Due to City
1	at installation	X	X	X
	Fall Year 1	X	X	X
2	Spring Year 2	X		

	Fall Year 2	X	X	X
3	Spring Year 3	X		
	Fall Year 3	X	X	X*
4	Spring Year 4	X		
	Fall Year 4	X	X	X
5	Spring Year 5	X		
	Fall Year 5	X	X	X*

*Request approval for release of bond from the City (presumes performance criteria are met).

8.1 Reports

Each monitoring report will include a) estimates of percent vegetative cover, plant survival, and invasive species, b) evidence of wildlife usage, c) photo-documentation, d) an overall qualitative assessment of project success for the mitigation areas, and e) maintenance recommendations. The first monitoring report will serve as the baseline assessment report. If the performance criteria are met, monitoring will cease after the third year.

8.2 Wildlife

Birds, mammals, reptiles, and amphibians observed in the mitigation areas (either by direct or indirect means) will be identified and recorded during scheduled monitoring events, and at any other times observations are made. Direct observations include actual sightings, while indirect observations may include tracks, scat, nests, burrows, song, or other indicative signs.

8.3 Photo Documentation

A series of color photographs representing views of the mitigation areas will be taken during each monitoring event. Photographs will be included with the performance monitoring reports.

9.0 VEGETATION MANAGEMENT PLAN (M) and CONTINGENCY (C)

Maintenance will be performed regularly to address any conditions that could jeopardize the success of the mitigation areas. During maintenance reviews (schedule shown in **Table 8**), any maintenance items requiring attention will be identified and reported to the property owner. Maintenance items requiring attention shall be completed within 30 days of the monitoring event.

Established performance standards for the project will be compared to the monitoring results to judge the success of the mitigation project. If there is a significant problem with the mitigation achieving its performance standards, the Bondholder shall work with the City to develop a Contingency Plan. Contingency plans can include, but are not limited to additional plant installation, erosion control, modifications to hydrology, and plant substitutions of type, size, quantity, and location. Such contingency Plan shall be submitted to the City by December 31 of any year when deficiencies are discovered.

Contingency and maintenance items may include many of the items listed below and would be implemented if performance standards are not met. Maintenance and remedial action on the site will be implemented immediately upon completion of the monitoring event (unless otherwise specifically indicated below).

- During year one, replace all dead plant material. (M)

- Water all plantings at a rate of 1" of water at least every week between June 15 and September 15, or as needed during the first year after installation, and for the first year after any replacement plantings. (C & M)
- Replace dead plants with the same species or a substitute species that meets the goal and objectives of the mitigation plan, subject to the approval of the wetland biologist. (C)
- Re-plant area after reason for failure has been identified (e.g., moisture regime, poor plant stock, disease, shade/sun conditions, wildlife damage, etc.). (C)
- Weed trees and shrubs to the drip line, by hand. Do not use mechanized devices, herbicides, or pesticides. Maintain mulch rings around trees and shrubs at a depth of 3 inches. (M)
- Remove/control weedy or exotic invasive plants (e.g., ivy, reed canarygrass, Himalayan blackberry, purple loosestrife, etc.). All non-native vegetation must be removed and dumped off site. (C & M)
- Clean up trash and other debris. (M)

10.0 PERFORMANCE ASSURANCE

The City may require an assurance device in compliance with LUC 20.40.490 to assure that the enhancement plan and monitoring and future maintenance area conducted adequately. A bond quantity worksheet detailing estimated projects costs is included in **Appendix E**.

11.0 REFERENCES

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<https://bellevue.municipal.codes/LUC>
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- Department of Ecology. 2014. Wetland Rating System for Western Washington.
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<https://apps.ecology.wa.gov/publications/documents/2106003.pdf>

Washington State Department of Ecology, U.S. Army Corps of Engineers Seattle District, and U.S. Environmental Protection Agency Region 10. March 2006. Wetland Mitigation in Washington State – Part 2: Developing Mitigation Plans (Version 1). Washington State Department of Ecology Publication #06-06-011b. Olympia, WA. Available at: <https://ecology.wa.gov/Water-Shorelines/Wetlands/Mitigation/Interagency-guidance>

Washington Department of Fish and Wildlife. 2021. Priority Habitats and Species (PHS) database. Accessed on-line at: <http://geo.wa.gov/datasets/> September 30, 2021

The Watershed Company. 2020. *Wetland Delineation Report*. August 18, 2020.

Appendix A

CONSULTANT QUALIFICATIONS

EDUCATION

B.S., Biology, 1998, Seattle University

REGISTRATIONS/CERTIFICATIONS

Professional Wetland Scientist, Society of Wetland Scientists

TRAINING

2016 Washington Department of Ecology Ordinary High Water Mark Training, October 2021

2014 Washington Department of Ecology Western Washington Rating System, April 2015

Designing and Installing Mitigation and Restoration Projects, April 2019

Using the Credit Debit Method for Estimating Mitigation Needs May 2018

Using the Field Indicators for Hydric Soils, June 2011

Advanced Hydric Soils, May 2006

Wetland and Upland Habitat Restoration Design, April 2006

Using the Revised Washington State Wetland Rating System in Western Washington, May 2005

Ordinary High Water Mark Determination Training, May 2003

Wetland Delineation Training Course, USACE, January 2002

Introduction to Grasses, Sedges, and Rushes, Fall 2003

EXPERIENCE SUMMARY

Twenty years of experience as a wetland biologist and botanist. Responsibilities have included wetland and stream delineations and reports, wetland functional value assessments, wetland monitoring, wetland/stream mitigation plans, vegetation surveys, and vegetation sampling and monitoring in wetlands and forests in the Pacific Northwest. She has authored numerous technical reports in support of local, state and federal permitting in many jurisdictions.

Wetland and Stream Delineations

- Assessed thousands of acres of land for the presence/absence of wetlands and streams. Experience working in the Western Mountains, Valleys and Coast Region, Alaska Region, and the Arid West Region. Experience includes delineations in a variety of habitat types as well as on disturbed lands, including disturbances resulting from land use violations caused by unpermitted fill and clearing, legally permitted uses such as historical and current agricultural uses, and changing hydrological conditions caused by urbanization.

Technical Writing and Permitting

- Experienced working as part of a project team on a variety of project types. Past work includes development projects for the private and public sector as well as nonprofit organizations. Experience ranges from small residential projects to large projects with potential impacts at a landscape scale such as inter- and intra-state transmission lines, timber sales, and mining projects. Experienced working on federal, state, and private land.
- Prepared Critical Area Reports, Biological Evaluations, JARPA applications, resource reports and botanical and wetland sections of Environmental Impact Statements in eastern and western Washington, Oregon and Alaska. Prepared wetland and stream delineation reports, feasibility studies, functional assessments, and wetland and stream mitigation plans. Mitigation plans include sites with wetland creation, enhancement and stream and wetland buffer enhancement.

Performance Monitoring

- Monitored over 75 implemented wetland mitigation and stream enhancement projects in eastern and western Washington.

EDUCATION

BS, Biology, 1987, Stockton University
MSc, Fisheries and Wildlife Ecology, Michigan State University

REGISTRATIONS/CERTIFICATIONS

Professional Wetland Scientist, Society of Wetland Scientists

TRAINING

2016 Washington Department of Ecology Ordinary High Water Mark Training, June 2021
Winter Tree and Shrub Identification for Western WA Puget Lowland Habitats, February 2021
Designing and Installing Mitigation and Restoration Projects, April 2019
Using the Revised Washington State Wetland Rating System (2014) in Eastern Washington
Wednesday, September 2018
Using the Credit Debit Method for Estimating Mitigation Needs May 2018
What's New in the Updated Version (2014) of the Washington State Wetland Rating System for Eastern
Washington, April 2016
Using the 2014 Washington Department of Ecology Western Washington Rating System, April 2015
Reviewing Wetland Mitigation and Monitoring Plans, December 2007
USACE Training on Regional General Permits: Applications and Uses, 2007
Wetland Delineation Training Course, Wetland Training Institute, September 2005

EXPERIENCE SUMMARY

Twenty years of experience as a wetland and wildlife biologist. Responsibilities and skills include wetland and stream delineations and reports, habitat assessment and management plans, mitigation and restoration design and monitoring, wetland functional assessment, permitting, and technical writing.

Technical reporting and permitting experience in numerous jurisdictions throughout Washington State, including state and federal agencies, counties, and cities. Completed projects have included Critical Areas Reports, Mitigation Plans, JARPA, Biological Evaluation, Environmental Impact Statement, Habitat Management Plans, and technical publications.

PUBLICATIONS

- Messina, S., D. Constantini, **S. Tomassi**, C.C.P. Cosset, S. Benedick, M. Eens, and D.P. Edwards. 2020. Selective logging reduces body size in omnivorous and frugivorous tropical forest birds. In review.
- Cosset, C.C.P., J.J. Gilroy, **S. Tomassi**, S. Benedick, L. Nelson, P.G. Cannon, S. Messina, M.R. Kaputa, M. Fandrem, R.S. Ramon, A. Lello-Smith, L. Paven, B. King, R. Folgliano, T. Hackney-Huck, E. Gerald, J. Chai, E. Cros, C. Yi Yao, H.T. Chen, R.C. Rayzigerson, C.C. Ong, and D.P. Edwards. 2020. Selective logging drives local movement in tropical understory avian communities. In review.
- Soto Madrid, R., O. Sychra, S. Benedick, D.P. Edwards, B.D. Efeykin, M. Fandrem, T. Haugaasen, A. Teterina, **S. Tomassi**, O. Tolstenkov. 2020. Diversity and host associations of *Myrsidea* chewing lice (Phthiraptera: Menoponidae) in the tropical rainforest of Malaysian Borneo. International Journal for Parasitology: Parasites and Wildlife 13:231-247.
- Cros, E., B. Chattopadhyay, K.M. Garg, N.S.R. Ng, **S. Tomassi**, S. Benedick, D.P. Edwards, and F.E. Rheindt. 2020. Quaternary land bridges have not been universal conduits of gene flow. Molecular Ecology. 2020;00:1–15.
- Cros, E., E.Y.X. Ng, R.R.Y. Oh, Q. Tang, S. Benedick, D.P. Edwards, S. Tomassi, M. Irestedt, P.G.P. Ericson, F.E. Rheindt. Fine-scale barriers to connectivity across a fragmented Southeast Asian landscape in six songbird species. 2020. Evolutionary Applications 2020;00:1-11.

Messina, S., D.P. Edwards, V. Marasco, V. Canoine, C.C.P. Cosset, **S. Tomassi**, S. Benedick, M. Eens, and D. Costantini. Glucocorticoids link forest type to local abundance in tropical birds. *Functional Ecology* 2020;00:1-12.

Freeman, B.G., A. Class, J. Mandeville, **S. Tomassi**, and B. M. Beehler. 2013. Ornithological survey of the mountains of the Huon Peninsula, Papua New Guinea. *Bull. British Ornith. Club* 133:4-18.

Azarad, J., J. Carleton, J. Davis, T. Quinn, C. Sato, M. Tirhi, **S. Tomassi**, and G. Wilhere. 2009. Landscape planning for Washington's wildlife: Managing for biodiversity in developing areas. Washington Department of Fish and Wildlife, Olympia, WA. 88pp.

Tomassi, S. A functional assessment method for urban wildlife habitat: Literature review, guidance, and rating form. City of Bellevue, WA. 40pp.

Garcelon, D.K., **S. Tomassi**, D. Kristan, and D. Delaney. 1997. Food habits of the bald eagle on Santa Catalina Island, November 1991 - December 1992. Report submitted to the Damage Assessment Office, U.S. Fish and Wildlife Service, Sacramento, CA. 24pp.

Tomassi, S. 2005. Management Strategies for Core Wildlife Habitat Areas in Eastern Jefferson County. Jefferson County Natural Resources Division.

Appendix B

Wetland Delineation Datasheets

WETLAND DETERMINATION DATA FORM – Western Mountains, Valleys, and Coast Region

Project/Site: Olteanu/City Parcel 332505-9024 City/County: Bellvue/King Sampling Date: 7/10/2021
 Applicant/Owner: Olteanu State: WA Sampling Point: DP#1
 Investigator(s): T.Opolka Section, Township, Range: 33/25/05E
 Landform (hillslope, terrace, etc.): Depression Local relief (concave, convex, none): CONCAVE Slope (%): 0
 Subregion (LRR): A Lat: _____ Long: _____ Datum: _____
 Soil Map Unit Name: Alderwood gravelly sandy loam, 8-15% slopes NWI Classification: PSSA

Are climatic / hydrologic conditions on the site typical for this time of year? ☒ Yes ☐ No (If no, explain in Remarks.)
 Are Vegetation ☐ , Soil ☐ , or Hydrology ☐ significantly disturbed? Are "Normal Circumstances" present? ☒ Yes ☐ No
 Are Vegetation ☐ , Soil ☐ , or Hydrology ☐ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? <input checked="" type="radio"/> Yes <input type="radio"/> No Hydric Soil Present? <input checked="" type="radio"/> Yes <input type="radio"/> No Wetland Hydrology Present? <input checked="" type="radio"/> Yes <input type="radio"/> No	Is the Sampled Area within a Wetland? <input checked="" type="radio"/> Yes <input type="radio"/> No
Remarks:	

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: <u>15</u>)	Absolute % Cover	Dom. Sp.?	Relative % Cover	Indicator Status	
1. _____					
2. _____					
3. _____					
4. _____					
_____ = Total Cover					
Sapling/Shrub Stratum (Plot size: <u>6</u>)					
1. <u>Salix lasiandra</u>	<u>70</u>	<u>Y</u>	<u>48.3</u>	<u>FACW</u>	
2. <u>Rubus spectabilis</u>	<u>75</u>	<u>Y</u>	<u>51.7</u>	<u>FAC</u>	
3. _____					
4. _____					
5. _____					
_____ = Total Cover					
Herb Stratum (Plot size: <u>3</u>)					
1. <u>Impatiens capensis</u>	<u>40</u>	<u>Y</u>	<u>100.0</u>	<u>FACW</u>	
2. _____					
3. _____					
4. _____					
5. _____					
6. _____					
7. _____					
8. _____					
9. _____					
10. _____					
11. _____					
_____ = Total Cover					
Woody Vine Stratum (Plot size: <u>6'</u>)					
1. _____					
2. _____					
_____ = Total Cover					
% Bare Ground in Herb Stratum <u>60</u>					

Dominance Test worksheet:
 Number of Dominant Species That Are OBL, FACW, or FAC: 3 (A)
 Total Number of Dominant Species Across All Strata: 3 (B)
 Percent of Dominant Species That Are OBL, FACW, or FAC: 100.0% (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species <u>0</u>	x 1 = <u>0</u>
FACW species <u>110</u>	x 2 = <u>220</u>
FAC species <u>75</u>	x 3 = <u>225</u>
FACU species <u>0</u>	x 4 = <u>0</u>
UPL species <u>0</u>	x 5 = <u>0</u>
Column Totals: <u>185</u> (A)	<u>445</u> (B)

Prevalence Index = B/A = 2.405

Hydrophytic Vegetation Indicators:
☐ 1 - Rapid Test for Hydrophytic Vegetation
☒ 2 - Dominance Test is >50%
☒ 3 - Prevalence Index is ≤3.0¹
☐ 4 - Morphological Adaptations¹ (Provide supporting data in Remarks or on a separate sheet)
☐ 5 - Wetland Non-Vascular Plants¹
☐ Problematic Hydrophytic Vegetation¹ (Explain)
¹Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present?
☒ Yes ☐ No

Remarks:

SOIL

Sampling Point: DP#1

[illegible]

HYDROLOGY

Wetland Hydrology Indicators:		
Primary Indicators (minimum of one required; check all that apply)		Secondary Indicators (2 or more required)
<input type="checkbox"/> Surface Water (A1)	<input type="checkbox"/> Water-Stained Leaves (B9) (except MLRA 1, 2, 4A, and 4B)	<input type="checkbox"/> Water-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B)
<input type="checkbox"/> High Water Table (A2)	<input type="checkbox"/> Salt Crust (B11)	<input type="checkbox"/> Drainage Patterns (B10)
<input type="checkbox"/> Saturation (A3)	<input type="checkbox"/> Aquatic Invertebrates (B13)	<input type="checkbox"/> Dry-Season Water Table (C2)
<input checked="" type="checkbox"/> Water Marks (B1)	<input type="checkbox"/> Hydrogen Sulfide Odor (C1)	<input type="checkbox"/> Saturation Visible on Aerial Imagery (C9)
<input type="checkbox"/> Sediment Deposits (B2)	<input type="checkbox"/> Oxidized Rhizospheres along Living Roots (C3)	<input type="checkbox"/> Geomorphic Position (D2)
<input type="checkbox"/> Drift Deposits (B3)	<input type="checkbox"/> Presence of Reduced Iron (C4)	<input type="checkbox"/> Shallow Aquitard (D3)
<input type="checkbox"/> Algal Mat or Crust (B4)	<input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6)	<input checked="" type="checkbox"/> FAC-Neutral Test (D5)
<input type="checkbox"/> Iron Deposits (B5)	<input type="checkbox"/> Stunted or Stressed Plants (D1) (LRR A)	<input type="checkbox"/> Raised Ant Mounds (D6) (LRR A)
<input type="checkbox"/> Surface Soil Cracks (B6)	<input type="checkbox"/> Other (Explain in Remarks)	<input type="checkbox"/> Frost-Heave Hummocks (D7)
<input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)		
<input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)		
Field Observations:		
Surface Water Present? <input type="radio"/> Yes <input checked="" type="radio"/> No Water Table Present? <input checked="" type="radio"/> Yes <input type="radio"/> No Saturation Present? <input checked="" type="radio"/> Yes <input type="radio"/> No (includes capillary fringe)	Depth (inches): _____ Depth (inches): <u>5</u> Depth (inches): <u>to surface</u>	Wetland Hydrology Present? <input checked="" type="radio"/> Yes <input type="radio"/> No
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:		
Remarks:		

WETLAND DETERMINATION DATA FORM – Western Mountains, Valleys, and Coast Region

Project/Site: Olteanu/City Parcel 332505-9024 City/County: Bellvue/King Sampling Date: 7/10/2021
 Applicant/Owner: Olteanu State: WA Sampling Point: DP#2
 Investigator(s): T.Opolka Section, Township, Range: 33/25/05E
 Landform (hillslope, terrace, etc.): Depression Local relief (concave, convex, none): CONCAVE Slope (%): 0
 Subregion (LRR): A Lat: _____ Long: _____ Datum: _____
 Soil Map Unit Name: Alderwood gravelly sandy loam, 8-15% slopes NWI Classification: upland scrub shrub

Are climatic / hydrologic conditions on the site typical for this time of year? ☒ Yes ☐ No (If no, explain in Remarks.)
 Are Vegetation ☐ , Soil ☐ , or Hydrology ☐ significantly disturbed? Are "Normal Circumstances" present? ☒ Yes ☐ No
 Are Vegetation ☐ , Soil ☐ , or Hydrology ☐ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? <input type="radio"/> Yes <input checked="" type="radio"/> No Hydric Soil Present? <input type="radio"/> Yes <input checked="" type="radio"/> No Wetland Hydrology Present? <input type="radio"/> Yes <input checked="" type="radio"/> No	Is the Sampled Area within a Wetland? <input type="radio"/> Yes <input checked="" type="radio"/> No
Remarks:	

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: <u>15</u>)	Absolute % Cover	Dom. Sp.?	Relative % Cover	Indicator Status	Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: <u>1</u> (A) Total Number of Dominant Species Across All Strata: <u>2</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>50.0%</u> (A/B)																																
1. _____	_____	_____	_____	_____																																	
2. _____	_____	_____	_____	_____																																	
3. _____	_____	_____	_____	_____																																	
4. _____	_____	_____	_____	_____																																	
= Total Cover																																					
Sapling/Shrub Stratum (Plot size: <u>6</u>)																																					
1. <u>Rubus armeniacus</u>	<u>90</u>	<u>Y</u>	<u>100.0</u>	<u>FAC</u>	Prevalence Index worksheet: <table style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="width: 40%;">Total % Cover of:</th> <th style="width: 20%;">Multiply by:</th> <th style="width: 20%;"></th> <th style="width: 20%;"></th> </tr> </thead> <tbody> <tr> <td>OBL species <u>0</u></td> <td>x 1 =</td> <td><u>0</u></td> <td></td> </tr> <tr> <td>FACW species <u>0</u></td> <td>x 2 =</td> <td><u>0</u></td> <td></td> </tr> <tr> <td>FAC species <u>90</u></td> <td>x 3 =</td> <td><u>270</u></td> <td></td> </tr> <tr> <td>FACU species <u>60</u></td> <td>x 4 =</td> <td><u>240</u></td> <td></td> </tr> <tr> <td>UPL species <u>0</u></td> <td>x 5 =</td> <td><u>0</u></td> <td></td> </tr> <tr> <td>Column Totals: <u>150</u></td> <td>(A)</td> <td><u>510</u></td> <td>(B)</td> </tr> <tr> <td colspan="4">Prevalence Index = B/A = <u>3.400</u></td> </tr> </tbody> </table>	Total % Cover of:	Multiply by:			OBL species <u>0</u>	x 1 =	<u>0</u>		FACW species <u>0</u>	x 2 =	<u>0</u>		FAC species <u>90</u>	x 3 =	<u>270</u>		FACU species <u>60</u>	x 4 =	<u>240</u>		UPL species <u>0</u>	x 5 =	<u>0</u>		Column Totals: <u>150</u>	(A)	<u>510</u>	(B)	Prevalence Index = B/A = <u>3.400</u>			
Total % Cover of:	Multiply by:																																				
OBL species <u>0</u>	x 1 =	<u>0</u>																																			
FACW species <u>0</u>	x 2 =	<u>0</u>																																			
FAC species <u>90</u>	x 3 =	<u>270</u>																																			
FACU species <u>60</u>	x 4 =	<u>240</u>																																			
UPL species <u>0</u>	x 5 =	<u>0</u>																																			
Column Totals: <u>150</u>	(A)	<u>510</u>	(B)																																		
Prevalence Index = B/A = <u>3.400</u>																																					
2. _____	_____	_____	_____	_____																																	
3. _____	_____	_____	_____	_____																																	
4. _____	_____	_____	_____	_____																																	
5. _____	_____	_____	_____	_____																																	
= Total Cover																																					
Herb Stratum (Plot size: <u>3</u>)																																					
1. <u>Polystichum munitum</u>	<u>60</u>	<u>Y</u>	<u>100.0</u>	<u>FACU</u>	Hydrophytic Vegetation Indicators: <input type="checkbox"/> 1 - Rapid Test for Hydrophytic Vegetation <input type="checkbox"/> 2 - Dominance Test is >50% <input type="checkbox"/> 3 - Prevalence Index is ≤3.0¹ <input type="checkbox"/> 4 - Morphological Adaptations¹ (Provide supporting data in Remarks or on a separate sheet) <input type="checkbox"/> 5 - Wetland Non-Vascular Plants¹ <input type="checkbox"/> Problematic Hydrophytic Vegetation¹ (Explain) ¹Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.																																
2. _____	_____	_____	_____	_____																																	
3. _____	_____	_____	_____	_____																																	
4. _____	_____	_____	_____	_____																																	
5. _____	_____	_____	_____	_____																																	
6. _____	_____	_____	_____	_____																																	
7. _____	_____	_____	_____	_____																																	
8. _____	_____	_____	_____	_____																																	
9. _____	_____	_____	_____	_____																																	
10. _____	_____	_____	_____	_____																																	
11. _____	_____	_____	_____	_____																																	
= Total Cover																																					
Woody Vine Stratum (Plot size: <u>6'</u>)																																					
1. _____	_____	_____	_____	_____	Hydrophytic Vegetation Present? <input type="radio"/> Yes <input checked="" type="radio"/> No																																
2. _____	_____	_____	_____	_____																																	
= Total Cover																																					
% Bare Ground in Herb Stratum <u>40</u>																																					
Remarks:																																					

SOIL

Sampling Point: DP#2

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)									
Depth (inches)	Matrix		Redox Features				Texture	Remarks	
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²			
0-7	10YR	4/2	100					sandy loam	

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. ²Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.) <input type="checkbox"/> Histosol (A1) <input type="checkbox"/> Histic Epipedon (A2) <input type="checkbox"/> Black Histic (A3) <input type="checkbox"/> Hydrogen Sulfide (A4) <input type="checkbox"/> Depleted Below Dark Surface (A11) <input type="checkbox"/> Thick Dark Surface (A12) <input type="checkbox"/> Sandy Mucky Mineral (S1) <input type="checkbox"/> Sandy Gleyed Matrix (S4) <input type="checkbox"/> Sandy Redox (S5) <input type="checkbox"/> Stripped Matrix (S6) <input type="checkbox"/> Loamy Mucky Mineral (F1) (except MLRA 1) <input type="checkbox"/> Loamy Gleyed Matrix (F2) <input type="checkbox"/> Depleted Matrix (F3) <input type="checkbox"/> Redox Dark Surface (F6) <input type="checkbox"/> Depleted Dark Surface (F7) <input type="checkbox"/> Redox Depressions (F8)	Indicators for Problematic Hydric Soils³: <input type="checkbox"/> 2 cm Muck (A10) <input type="checkbox"/> Red Parent Material (TF2) <input type="checkbox"/> Very Shallow Dark Surface (TF12) <input type="checkbox"/> Other (Explain in Remarks) ³ Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.
---	--

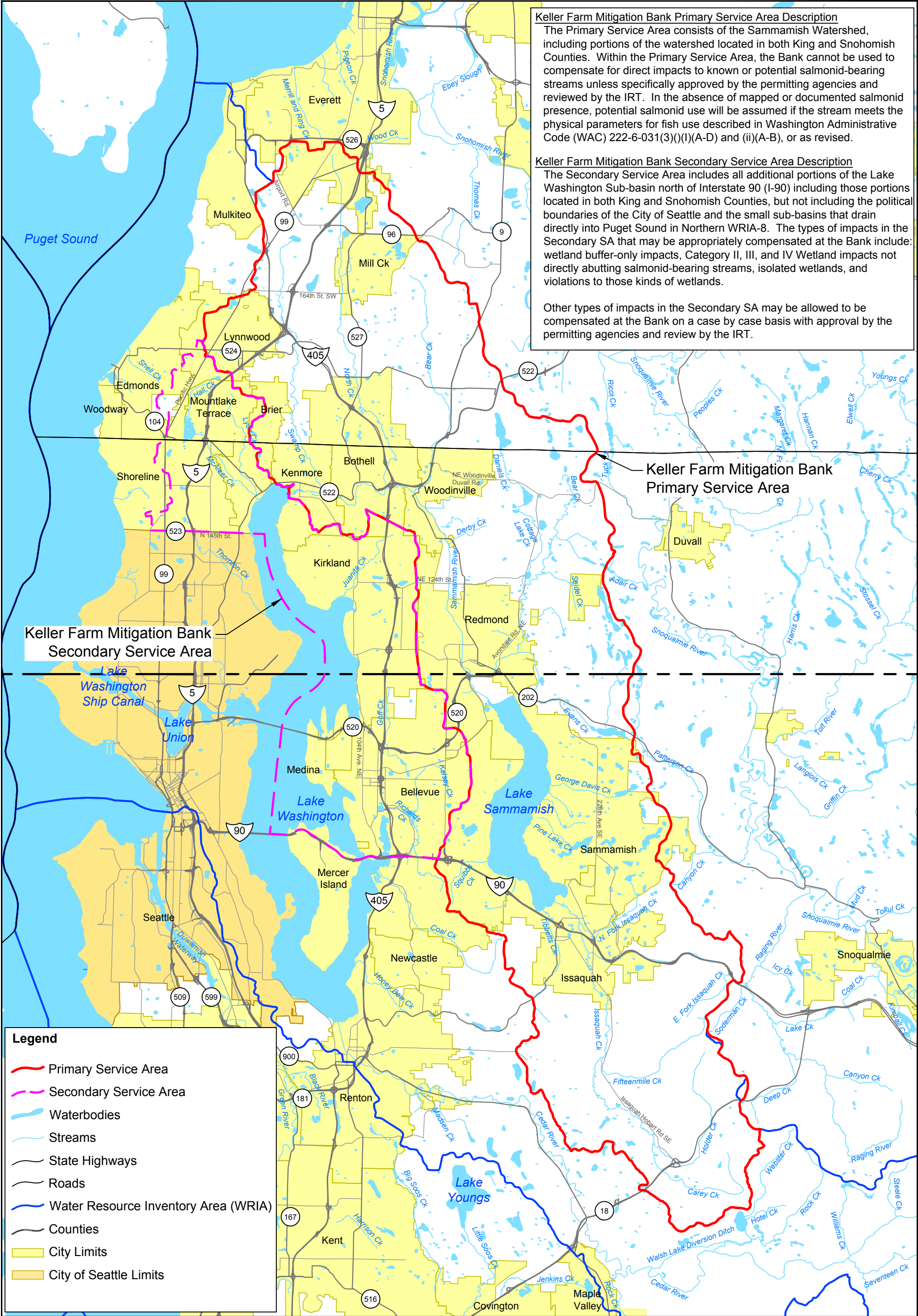
Restrictive Layer (if present): Type: <u>7"</u> Depth (inches): <u>rock</u>	Hydric Soil Present? <input type="radio"/> Yes <input checked="" type="radio"/> No
Remarks:	

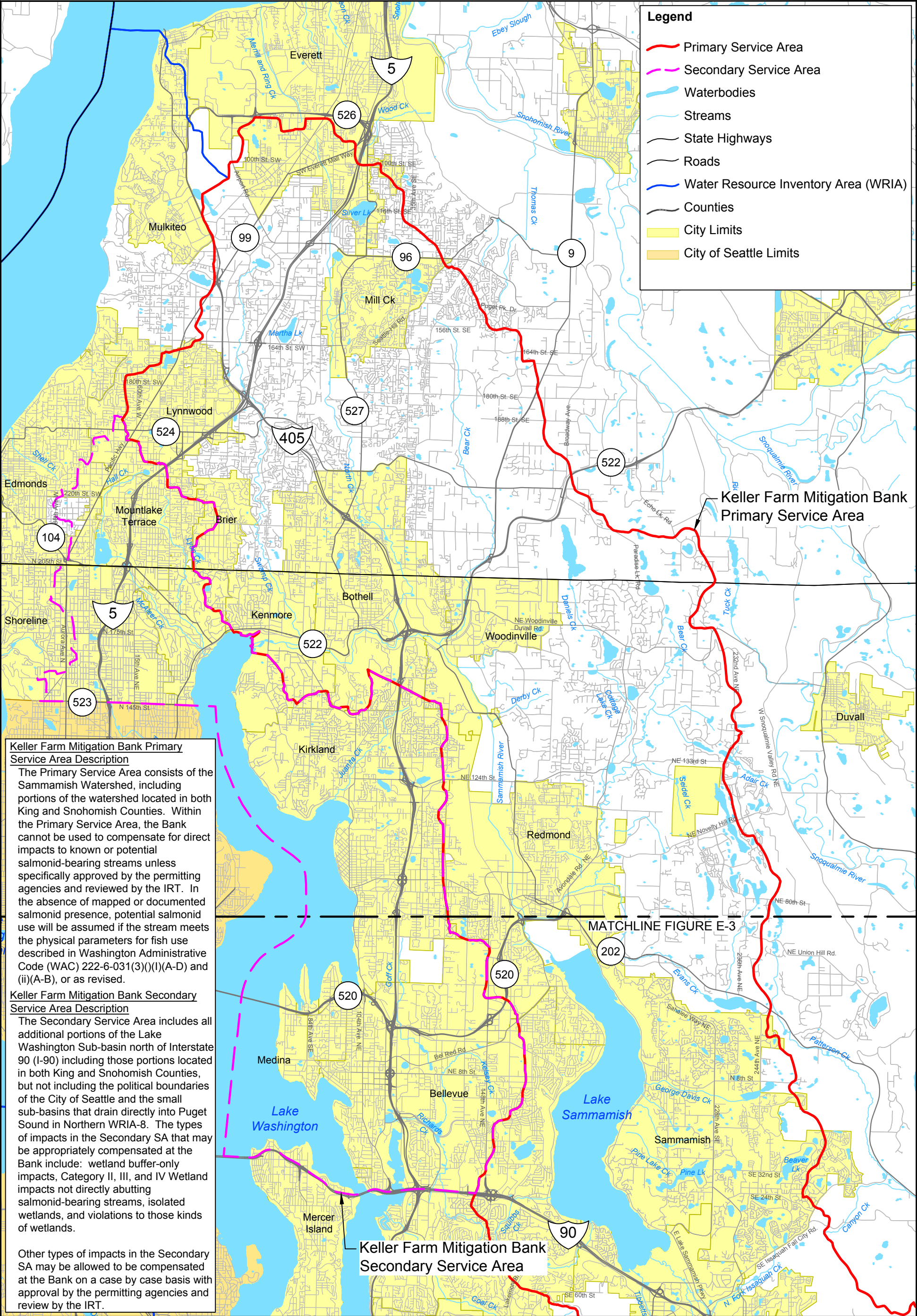
HYDROLOGY

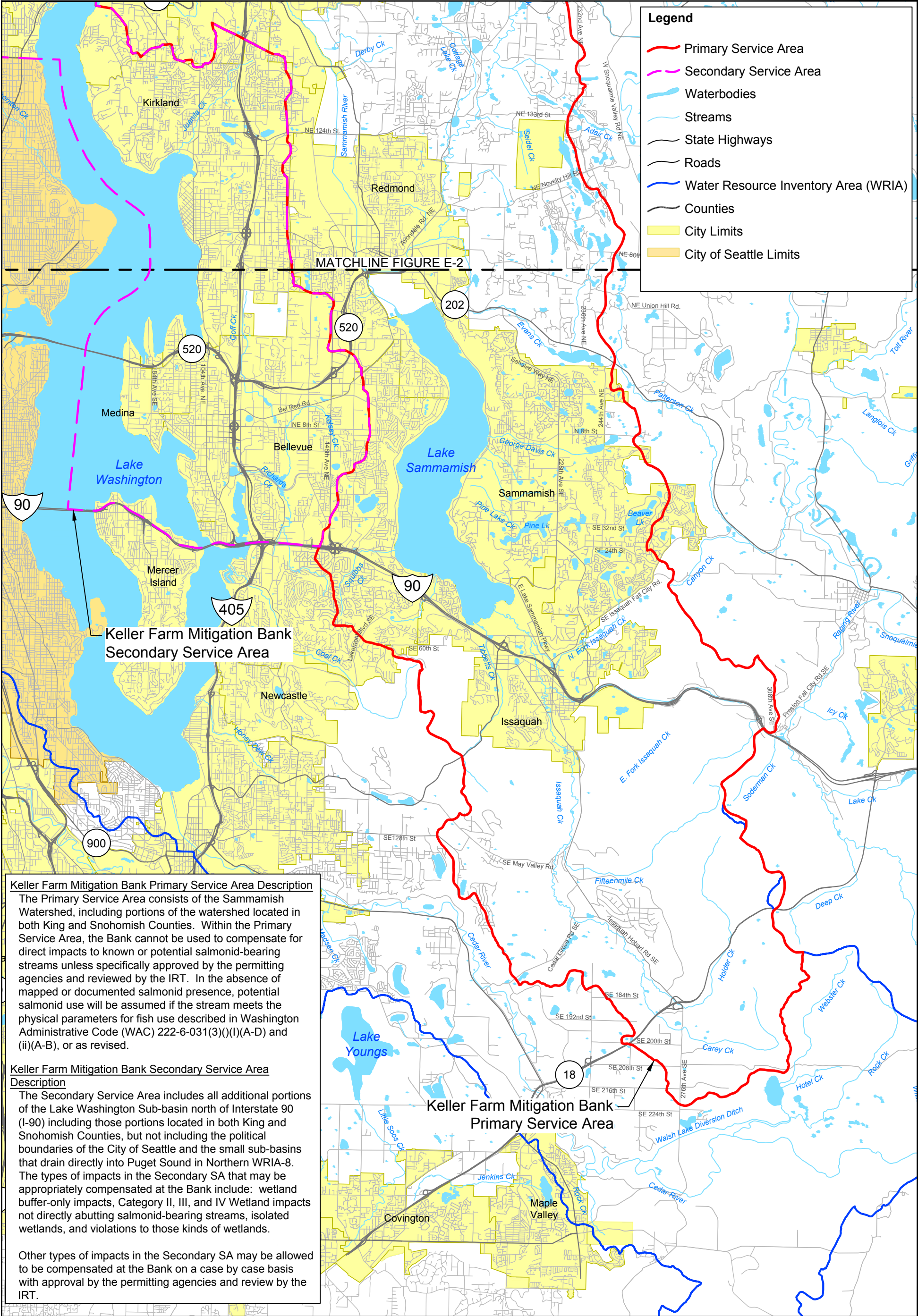
Wetland Hydrology Indicators: Primary Indicators (minimum of one required; check all that apply)				Secondary Indicators (2 or more required)			
<input type="checkbox"/> Surface Water (A1) <input type="checkbox"/> High Water Table (A2) <input type="checkbox"/> Saturation (A3) <input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Drift Deposits (B3) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Surface Soil Cracks (B6) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)	<input type="checkbox"/> Water-Stained Leaves (B9) (except MLRA 1, 2, 4A, and 4B) <input type="checkbox"/> Salt Crust (B11) <input type="checkbox"/> Aquatic Invertebrates (B13) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input type="checkbox"/> Oxidized Rhizospheres along Living Roots (C3) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input type="checkbox"/> Stunted or Stressed Plants (D1) (LRR A) <input type="checkbox"/> Other (Explain in Remarks)	<input type="checkbox"/> Water-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B) <input type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Dry-Season Water Table (C2) <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input type="checkbox"/> Geomorphic Position (D2) <input type="checkbox"/> Shallow Aquitard (D3) <input type="checkbox"/> FAC-Neutral Test (D5) <input type="checkbox"/> Raised Ant Mounds (D6) (LRR A) <input type="checkbox"/> Frost-Heave Hummocks (D7)					
Field Observations: Surface Water Present? <input type="radio"/> Yes <input checked="" type="radio"/> No Depth (inches): _____ Water Table Present? <input type="radio"/> Yes <input checked="" type="radio"/> No Depth (inches): _____ Saturation Present? <input type="radio"/> Yes <input checked="" type="radio"/> No Depth (inches): _____ (includes capillary fringe)				Wetland Hydrology Present? <input type="radio"/> Yes <input checked="" type="radio"/> No			
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:							
Remarks:							

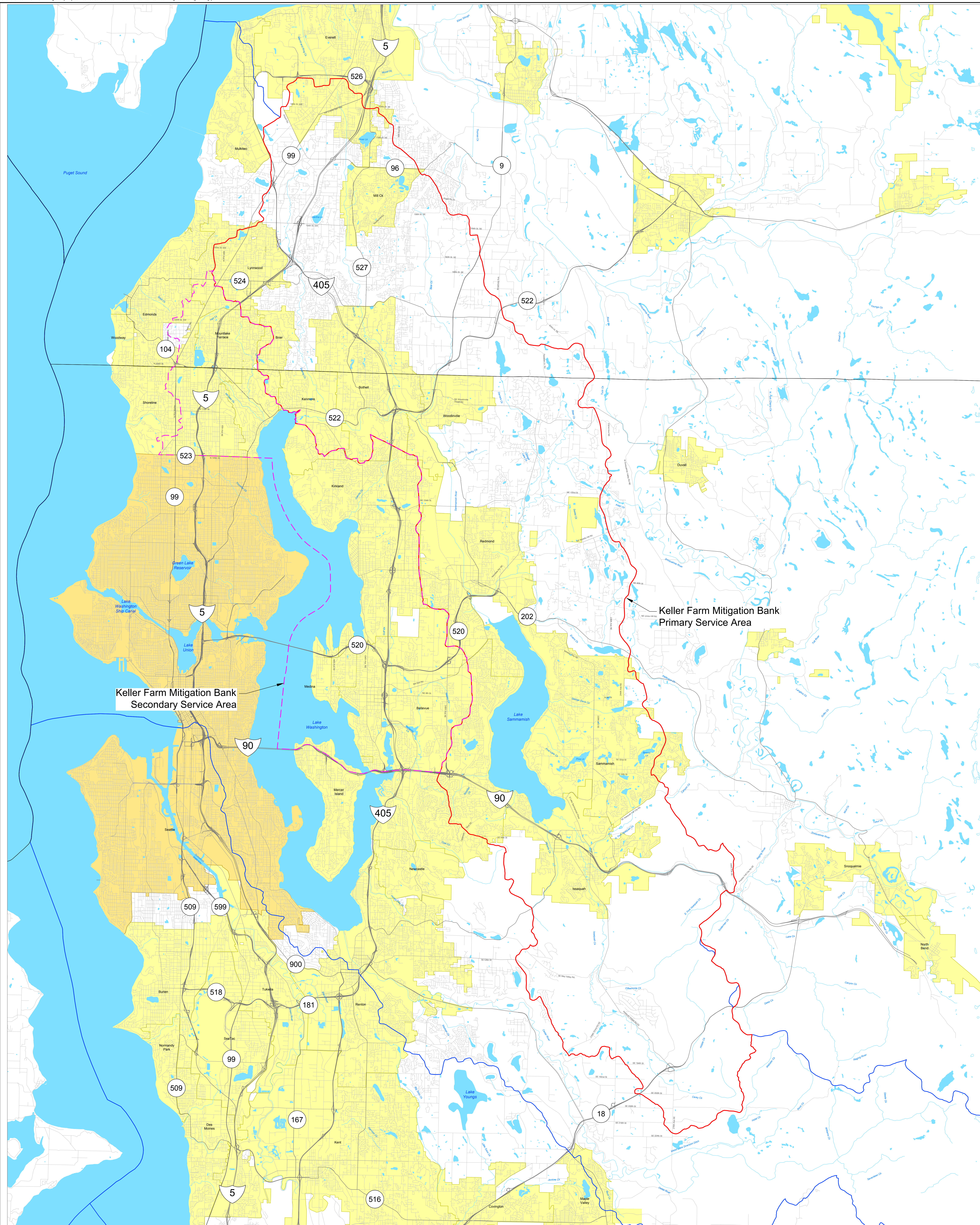
Appendix C

Keller Farm Mitigation Bank Service Area Maps









Keller Farm Mitigation Bank
Secondary Service Area

Keller Farm Mitigation Bank
Primary Service Area

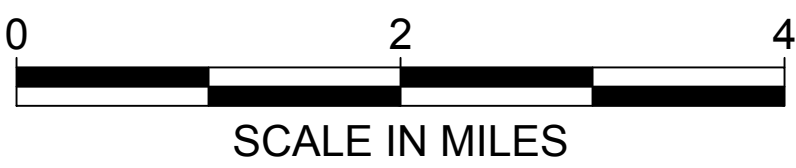
Keller Farm Mitigation Bank Primary Service Area Description
The Primary Service Area consists of the Sammamish Watershed, including portions of the watershed located in both King and Snohomish Counties. Within the Primary Service Area, the Bank cannot be used to compensate for direct impacts to known or potential salmonid-bearing streams unless specifically approved by the permitting agencies and reviewed by the RIT. In the absence of mapped or documented salmonid presence, potential salmonid use will be assumed if the stream meets the physical parameters for fish use described in Washington Administrative Code (WAC) 222-02-010 (WUA-2) and (WUA-3), or as reviewed.

Keller Farm Mitigation Bank Secondary Service Area Description
The Secondary Service Area includes all additional portions of the Lake Washington Sub-basin north of Interstate 90 (I-90) including those portions located in both King and Snohomish Counties, but not including the political boundaries of the City of Seattle and the small sub-basins that drain directly into Puget Sound in Northern WRIA-8. The types of impacts in the Secondary SA that may be appropriately compensated at the Bank include wetland buffer-only impacts, Category II, III, and IV Wetland impacts not directly affecting salmonid-bearing streams, isolated wetlands, and violations to those kinds of wetlands.

Other types of impacts in the Secondary SA may be allowed to be compensated at the Bank on a case by case basis with approval by the permitting agencies and review by the RIT.

Legend

- Primary Service Area
- Secondary Service Area
- Waterbodies
- Streams
- State Highways
- Roads
- Water Resource Inventory Area (WRIA)
- Counties
- City Limits
- City of Seattle Limits



DIGITAL DISPLAY FIGURE
Please contact bank
sponsor for Google Earth™
KMZ Service Area
Boundary lines.




Appendix D

Available KFMB Credit Ledger

Keller Farm Mitigation Bank Credit Ledger									
Contact: Victor Woodward (425) 785-8428									Date: August 19, 2021
Transaction Date	Credits Received		Credits Debited						
	Credits Received	Bank Performance Standards	Credits Debited	Credits Reserved	Permittee, Address, Phone	Permitting Agencies and Permit Numbers	Permit Issuance Date	Project Location	Brief Description of Impact(s) Compensated for by KFMB Credits
April 29, 2020	7.4600	1A, 1B, 1C, 1D and 1E							IRT credit release for the achievement of MBI performance standards: 1A, 1B, 1C, 1D and 1E.
September 10, 2020			1.5130		Sound Transit Attn: Ellie Ziegler 401 S Jackson Street Seattle, WA 98104-9826	USACE: NWS-2018-173 WA Dept. of Ecology: #16844 City of Redmond: LAND-2019-00691	Not yet issued 10/10/19 12/02/19	The downtown Redmond link light rail extension project is a 3.4-mile extension from the Redmond Technology Center at NE 40th Street to downtown in the City of Redmond, Washington.	Project impacts include 0.938 acre of permanent wetland impacts, 0.460 acre of long-term temporary wetland impacts, 0.023 acre of wetland vegetation conversion, and 0.824 acre of wetland buffer.
October 5, 2020			0.0428		Condor Homes LLC. Attn: Mr. Kyle Gellner 2215 117th Ave NE Lake Stevens, WA 98258	Snohomish County: LDA-20101495	October, 2020	The project is located in Snohomish County, Washington, Parcel #27052700103600	The project will impact 6,218 square feet of Category 2 Wetland Buffer
October 29, 2020			0.5720		Sound Transit Attn: Ellie Ziegler 401 S Jackson Street Seattle, WA 98104-9826	USACE: NWS-1999-428 King County: GRDE20-0039	February 2020 To be issued	The downtown Redmond link light rail extension project is a 3.4-mile extension from the Redmond Technology Center at NE 40th Street to downtown in the City of Redmond, Washington.	The Project will affect a portion of a Category III wetland (Wetland WKC-3) that was part of a former compensatory mitigation project completed by King County Parks in 2001 (Corps Reference Number NWS-1999-428). Sound Transit is compensating for a total of 0.572 acre of the mitigation area of Wetland WKC-3 that will be removed from the restrictive covenant.
January 11, 2021			0.0450		Issaquah School District 5150-220th Ave SE Issaquah, WA 98029 Contact: Tom Mullins Director, Capital Projects	USACE: NWS-2020-761 City of Sammamish: ROW2020-01329	11/19/2020 To be issued	The project is located within the right-of-way of Issaquah-Pine Lake Rd. SE, between SE Klahanie Boulevard and SE 44th St., and along the eastern edge of King County Tax Parcels #1524069086 and #1524069026 in the City of Sammamish, WA.	Permanent impact to .03 acres of Category 3 wetland and .05 acres of wetland and stream buffer
March 23, 2021			0.1009		Pacific Ridge-DRH, LLC Attn: Scott Borgeson 17921 Bothell-Everett Hwy. Suite 100 Bothell, WA 98012	USACE: NWS-2019-685 Snohomish County: 20-110523 LDA	09-16-2020 To be issued	The project is located at: 2707 and 20715 Richmond Road, and 329 208th Street, within the Bothell area of unincorporated Snohomish County, Washington	Unavoidable permanent impacts to critical area wetland buffer and drainage area.
April 15, 2021			0.0600		Pacific Ridge-DRH, LLC Attn: John Mirante 17921 Bothell-Everett Hwy. Suite 100 Bothell, WA 98012	Eology: AO#19800 Snohomish County: 20-113155 LDA Snohomish County: 20-102059 PSD Snohomish County: 20-102059 SPA	03-30-2021 03-08-2021 11-25-2020 11-25-2020	Located on four tax parcels in Snohomish County, Washington: 00374100300101, 00374100300102, 00374100300202, and 00374100300204	Unavoidable impacts to 2,564 sq/ft of a Category 3 Wetland.
June 22, 2021			0.0389		Julia and Michael Jeffery 24126 Carter Rd. Bothell, WA 98021	Snohomish County: 20114777 LDA Snohomish County: 20114782 RK Snohomish County: 20115206 D1	05-25-2021 05-25-2021 05-25-2021	The project is located at: 24204 Carter Road, Bothell, WA in unincorporated Snohomish County.	Unavoidable impacts to 5,640 square feet of a critical area wetland buffer.
August 16, 2021			0.0270		Tri Pointe Homes Attn: Mr. John Potts 15900 SE Eastgate Way Suite 300 Bellevue, WA 98008	USACE: NWS-2021-558 City of Redmond: SITE-2021-00140	July 28, 2021 July 27, 2021	Located along the western portion of Willows Road, southwest of the intersection of NE 124th Street and Willows Road, in the City of Redmond, WA	490 sq/ft of wetland fill and 2,592 square feet of critical area buffer impact
August 19, 2021			0.0370		Tri Pointe Homes Attn: Mr. John Potts 15900 SE Eastgate Way Suite 300 Bellevue, WA 98008	USACE: NWS-2019-672 City of Redmond: SITE-2021-00140	Sept. 25, 2020 July 27, 2021	located on two tax parcels (#2726059026 and #2726059024) southwest of the intersection of NE 124th Street and Willows Road in the City of Redmond, WA	1,934 square feet of impact to a CAT 4 Wetland.
Totals:	7.4600		2.4366	0.000					
Current Credit Balance KFMB:	5.0234								

Appendix E

Bond Quantity Worksheet



Department of Permitting and
Environmental Review
35030 SE Douglas Str, Suite 210
Snoqualmie, WA 98065-9266
206-296-6600 TTY Relay: 711

Critical Areas Mitigation
Bond Quantity Worksheet

C24 09/09/2015
ls-wks-sensareaBQ.xls
ls-wks-sensareaBQ.pdf

Project Name:Olteanu Residence

Date:18-Oct-21

Prepared by:T.Opolka

19-341

Project Description:

Applicant:

Phone:

PLANT MATERIALS (includes labor cost for
plant installation)

Type	Unit Price	Unit	Quantity	Description	Cost
PLANTS: Potted, 4" diameter, medium	\$5.00	Each			\$ -
PLANTS: Container, 1 gallon, medium soil	\$11.50	Each	658.00		\$ 7,567.00
PLANTS: Container, 2 gallon, medium soil	\$20.00	Each	127.00		\$ 2,540.00
PLANTS: Container, 5 gallon, medium soil	\$36.00	Each	19.00		\$ 684.00
PLANTS: Seeding, by hand	\$0.50	SY			\$ -
PLANTS: Slips (willow, red-osier)	\$2.00	Each			\$ -
PLANTS: Stakes (willow)	\$2.00	Each			\$ -
PLANTS: Stakes (willow)	\$2.00	Each			\$ -
PLANTS: Flats/plugs	\$2.00	Each			\$ -
TOTAL					\$ 10,791.00

INSTALLATION COSTS (LABOR, EQUIPMENT, & OVERHEAD)

Type	Unit Price	Unit			Cost
Compost, vegetable, delivered and spread	\$37.88	CY			\$ -
Decompacting till/hardpan, medium, to 6" depth	\$1.57	CY			\$ -
Decompacting till/hardpan, medium, to 12" depth	\$1.57	CY			\$ -
Hydroseeding	\$0.51	SY			\$ -
Labor, general (landscaping other than plant installation)	\$40.00	HR			\$ -
Labor, general (construction)	\$40.00	HR			\$ -
Labor: Consultant, supervising	\$55.00	HR	16.00		\$ 880.00
Labor: Consultant, on-site re-design	\$95.00	HR			\$ -
Rental of decompacting machinery & operator	\$70.00	HR			\$ -
Sand, coarse builder's, delivered and spread	\$42.00	CY			\$ -
Staking material (set per tree)	\$7.00	Each			\$ -
Surveying, line & grade	\$250.00	HR			\$ -
Surveying, topographical	\$250.00	HR			\$ -
Watering, 1" of water, 50' soaker hose	\$3.62	MSF			\$ -
Irrigation - temporary	\$3,000.00	Acre	0.50		\$ 1,500.00
Irrigation - buried	\$4,500.00	Acre			\$ -
Tilling topsoil, disk harrow, 20hp tractor, 4"-6" deep	\$1.02	SY			\$ -
TOTAL					\$ 2,380.00

HABITAT STRUCTURES*

ITEMS	Unit Cost	Unit			Cost
Fascines (willow)	\$ 2.00	Each			\$ -
Logs, (cedar), w/ root wads, 16"-24" diam., 30' long	\$1,000.00	Each			\$ -
Logs (cedar) w/o root wads, 16"-24" diam., 30'	\$400.00	Each			\$ -
Logs, w/o root wads, 16"-24" diam., 30' long	\$245.00	Each			\$ -
Logs w/ root wads, 16"-24" diam., 30' long	\$460.00	Each			\$ -
Rocks, one-man	\$60.00	Each			\$ -
Rocks, two-man	\$120.00	Each			\$ -
Root wads	\$163.00	Each			\$ -
Spawning gravel, type A	\$22.00	CY			\$ -
Weir - log	\$1,500.00	Each			\$ -
Weir - adjustable	\$2,000.00	Each			\$ -
Woody debris, large	\$163.00	Each			\$ -
Snags - anchored	\$400.00	Each			\$ -
Snags - on site	\$50.00	Each			\$ -
Snags - imported	\$800.00	Each			\$ -
* All costs include delivery and installation					TOTAL \$ -

EROSION CONTROL

ITEMS	Unit Cost	Unit			Cost
Backfill and Compaction-embankment	\$ 4.89	CY			\$ -
Crushed surfacing, 1 1/4" minus	\$30.00	CY			\$ -
Ditching	\$7.03	CY			\$ -
Excavation, bulk	\$4.00	CY			\$ -
erosion control wattles	\$0.66	LF	722.00		\$ 476.52
Jute Mesh	\$1.26	SY			\$ -
Mulch, by hand, straw, 2" deep	\$1.27	SY			\$ -
Mulch, by hand, wood chips, 4" deep	\$35.00	SY	137.00		\$ 4,795.00
Mulch, by machine, straw, 1" deep	\$0.32	SY			\$ -
Piping, temporary, CPP, 6"	\$9.30	LF			\$ -
Piping, temporary, CPP, 8"	\$14.00	LF			\$ -
Piping, temporary, CPP, 12"	\$18.00	LF			\$ -
Plastic covering, 6mm thick, sandbagged	\$2.00	SY			\$ -
Rip Rap, machine placed, slopes	\$33.98	CY			\$ -
Rock Constr. Entrance 100'x15'x1'	\$3,000.00	Each			\$ -
Rock Constr. Entrance 50'x15'x1'	\$1,500.00	Each			\$ -
Sediment pond riser assembly	\$1,695.11	Each			\$ -
Sediment trap, 5' high berm	\$15.57	LF			\$ -
Sediment trap, 5' high berm w/spillway incl. riprap	\$59.60	LF			\$ -
Sodding, 1" deep, level ground	\$5.24	SY			\$ -
Sodding, 1" deep, sloped ground	\$6.48	SY			\$ -
Straw bales, place and remove	\$600.00	TON			\$ -
Hauling and disposal	\$20.00	CY			\$ -
Topsoil, delivered and spread**	\$35.73	CY			\$ -
**TOPSOIL IS FOR AREA OF GRAVEL REMOVAL					TOTAL \$ 5,271.52

GENERAL ITEMS						
ITEMS	Unit Cost	Unit			Cost	
Fencing, chain link, 6' high	\$18.89	LF			\$	-
Fencing, chain link, corner posts	\$111.17	Each			\$	-
Fencing, chain link, gate	\$277.63	Each			\$	-
Fencing, split rail, 3' high (2-rail)	\$10.54	LF			\$	-
Fencing, temporary (NGPE)	\$1.20	LF			\$	-
Signs, sensitive area boundary (inc. backing, post, install)	\$28.50	Each			\$	-
					TOTAL	\$ -
OTHER				(Construction Cost Subtotal)	\$	18,442.52
MAINTENANCE AND MONITORING						
NOTE: Projects with multiple permit requirements may be required to have longer monitoring and maintenance terms. This will be evaluated on a case-by-case basis for development applications. Monitoring and maintance ranges may be assessed anywhere from 5 to 10 years.						
Maintenance, annual (by owner or consultant)						
Less than 1,000 sq.ft. and buffer mitigation only	\$ 1.08	SF		(3 X SF total for 3 annual events; Includes monitoring)	\$	-
Less than 1,000 sq.ft. with wetland or aquatic area mitigation	\$ 1.35	SF		(3 X SF total for 3 annual events; Includes monitoring)	\$	-
Larger than 1,000 sq. ft. but less than 5,000 sq.ft. of buffer mitigation	\$ 180.00	EACH		(4hr @\$45/hr)	\$	-
Larger than 1,000 sq. ft. but less than 5,000 sq.ft. of wetland or aquatic area mitigation	\$ 270.00	EACH		(6hr @\$45/hr)	\$	-
Larger than 5,000 sq.ft. but < 1 acre -buffer mitigation only	\$ 360.00	EACH		(8 hrs @ 45/hr)	\$	-
Larger than 5,000 sq.ft. but < 1 acre with wetland or aquatic area mitigation	\$ 450.00	EACH	5.00	(10 hrs @ \$45/hr)	\$	2,250.00
Larger than 1 acre but < 5 acres - buffer and / or wetland or aquatic area mitigation	\$ 1,600.00	DAY		(WEC crew)	\$	-
Larger than 5 acres - buffer and / or wetland or aquatic area mitigation	\$ 2,000.00	DAY		(1.25 X WEC crew)	\$	-
Monitoring, annual (by owner or consultant)						
Larger than 1,000 sq.ft. but less than 5,000 wetland or buffer mitigation	\$ 720.00	EACH		(8 hrs @ 90/hr)	\$	-
Larger than 5,000 sq.ft. but < 1 acre with wetland or aquatic area impacts	\$ 900.00	EACH	7.00	(10 hrs @ \$90/hr)	\$	6,300.00
Larger than 1 acre but < 5 acres - buffer and / or wetland or aquatic area impacts	\$ 1,440.00	DAY		(16 hrs @ \$90/hr)	\$	-
Larger than5 acres - buffer and / or wetland or aquatic area impacts	\$ 2,160.00	DAY		(24 hrs @ \$90/hr)	\$	-
					TOTAL	\$ 8,550.00
					Total	\$26,992.52
					150%	\$40,488.78